



# WORLDS OF SCIENCE FICTION

JUNE 35 CENTS

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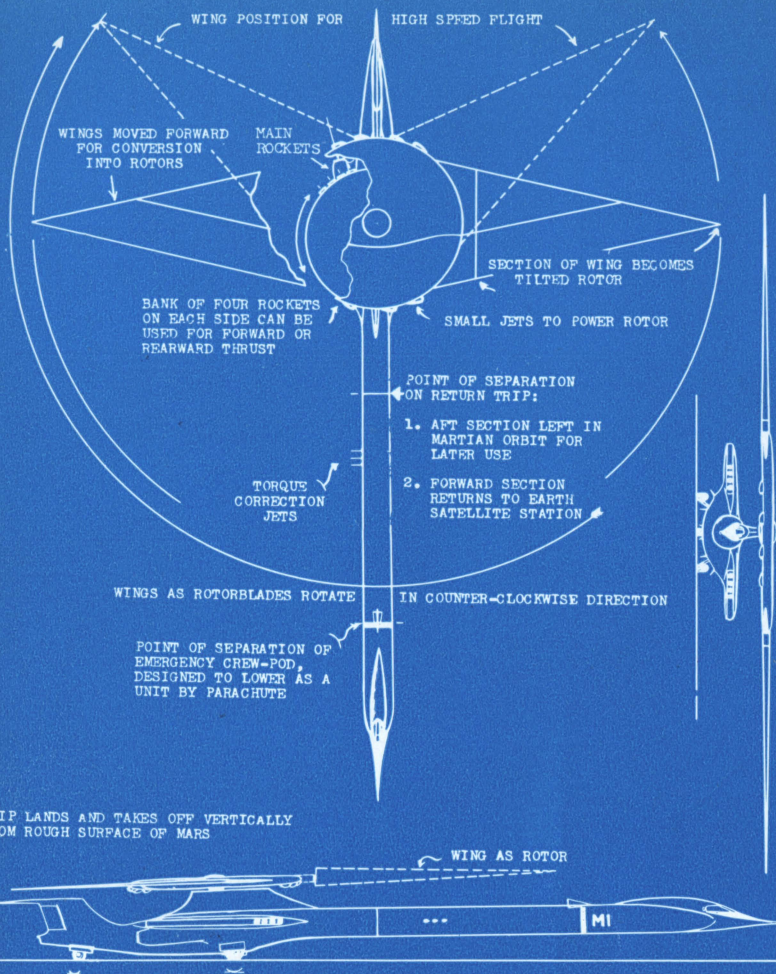
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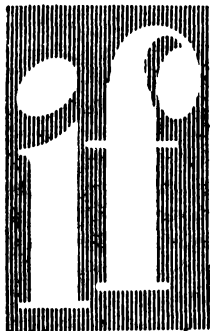
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KODACHROME FROM FILES OF FIRST MARS EXPEDITION



**ROCKET ROTORSHIP** by Mel Hunter—Theoretical Mars ship designed to take advantage of the thin Martian atmosphere. The ship leaves an Earth Satellite Station and arrives in the upper atmosphere of Mars with wings in swept-back position. Using its rotating bank of eight motors in forward braking position, speed is finally slowed to a mushing stall in atmosphere. Wings are moved forward till they oppose, and are angled to become effective rotor blades, whereupon ship lowers like a helicopter to a vertical landing. Return journey is just the reverse, except that whole wing and tail assembly may be left in orbit about Mars for future use, and long nose section goes home alone, on chemical rocket power. Wing and tail section are atomically powered. Long nose section serves double purpose of being lightweight return rocket, and providing shielding for crew by long distance from aft reactor. White areas (see cover) are ceramic to withstand terrific heat.



# WORLDS of SCIENCE FICTION

JUNE 1957

All Stories New and Complete

Editor: JAMES L. QUINN

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*Illustrated by Virgil Finlay*

*Once a man has chosen a path to follow, there's no turning back. But what if the die could be recast and we could retrace our steps when we chose the wrong one . . . and choose another?*

## Pretty Quadroon

GENERAL Beauregard Courtney sat in his staff car atop a slight rise and watched the slow, meshing movement of his troops on the plains south of Tullahoma, Tennessee. Clouds of dust drifted westward in the lazy summer air, and the dull boom of enemy artillery sounded from the north.

"You damn black coon," he said without rancor, "you know you're costing me a night's sleep?"

The Negro courier stood beside his motorcycle and his teeth flashed white in his good-natured face. The dust of the road filmed his uniform of Southern grey.

"Miss Piquette told me to bring you the message, suh," he answered.

"A wife couldn't be more demanding," grumbled Beau-

regard. "Why couldn't she wait until this push is over?"

"I don't know, suh," said the courier.

"Well, get back to headquarters and get some supper," commanded Beauregard. "You can fly back to Chattanooga with me."

The man saluted and climbed aboard his motorcycle. It kicked to life with a sputtering roar, and he turned it southward on what was left of the highway.

The sun was low in the west, and its reddening beams glinted from the weapons and vehicles of the men who moved through the fields below Beauregard. That would be the 184th, moving into the trenches at the edge of what had been Camp Forrest during the last war.

On the morrow this was to be the frontal attack on what was left of the Northern wind tunnel installations, while the armor moved in like a powerful pincers from Pelham to the east and Lynchburg to the west. If the Union strongpoint at Tullahoma could be enveloped, the way lay open to Shelbyville and the north. No natural barrier lay north of Tullahoma until the Duck River was reached.

This was the kind of warfare Beauregard Courtney relished, this wheeling and maneuvering of tanks across country, this artillery barrage followed by infantry assault, the planes used in tactical support. It was more a soldier's warfare than the cold, calculated, long-range bombardment by guided missiles, the lofty, aloof flight of strategic bombers. He would have been happy to live in the days when

Wars were fought with sword and spear.

When the Second War for Southern Independence (the Northerners called it "The Second Rebellion") had broken out, Beauregard had feared it would be a swift holocaust of hydrogen bombs, followed by a cruel scourge of guerilla fighting. But not one nuclear weapon had exploded, except the atomic artillery of the two opposing forces. A powerful deterrent spelled caution to both North and South.

Sitting afar, watching the divided country with glee, was Soviet Russia. Her armies and navies were mobilized. She waited only for the two halves of the United States to ruin and weaken each other, before her troops would crush the flimsy barriers of western Europe and move into a disorganized America.

So the Second Rebellion (Beauregard found himself using the term because it was shorter) remained a classic war of fighting on the ground and bombing of only industrial and military targets. Both sides, by tacit agreement, left the great superhighways intact, both held their H-bombers under leash, ready to reunite if need be against a greater threat.

Just now the war was going well for the South. At the start, the new Confederacy had held nothing of Tennessee except Chattanooga south of the mountains and the southwestern plains around Memphis. That had been on Beauregard's advice, for he was high in the councils of the Southern military. He had felt it too dangerous to try to hold the lines as far north

as Nashville, Knoxville and Paducah until the South mobilized its strength.

He had proved right. The Northern bulge down into Tennessee had been a weak point, and the Southern sympathies of many Tennesseans had hampered their defense. The Army of West Tennessee had driven up along the Mississippi River plains to the Kentucky line and the Army of East Tennessee now stood at the gates of Knoxville. Outflanked by these two threats, the Union forces were pulling back toward Nashville before Beauregard Courtney's Army of Middle Tennessee, and he did not intend to stop his offensive short of the Ohio River.

"Head back for Winchester, Sergeant," he commanded his driver. The man started the staff car and swung it around on the highway.

He should not go to Chattanooga, Beauregard thought as the car bumped southward over the rutted road. His executive officer was perfectly capable of taking care of things for the few hours he would be gone, but it ran against his military training to be away from his command so soon before an attack.

Had the summons come from his wife, Beauregard would have sent her a stern refusal, even had she been in Chattanooga instead of New Orleans. She had been a soldier's wife long enough to know that duty's demands took precedence over conjugal matters.

But there was a weakness in him where Piquette was concerned. Nor was that all. She knew, as well as Lucy did, the stern requirements

of military existence; and she was even less likely than Lucy to ask him to come to her unless the matter was of such overwhelming import as to overshadow what he gained by staying.

Beauregard sighed. He would eat a light supper on the plane and be back in Winchester by midnight. The pre-attack artillery barrage was not scheduled to open before four o'clock in the morning.

The plane put down at the Chattanooga airport at dusk, and a swift military car took him down Riverside Drive, past the old Confederate cemetery, and downtown.

Chattanooga was a military city. Grey-uniformed military police stood at the intersections, and soldiers on rest leave from both East and Middle armies trooped in laughing gangs along darkened Market Street. Few civilians were abroad.

The siren and circled stars on Beauregard's car cleared a path for him through the sparse downtown traffic. The car roared out Broad Street, swung under the viaduct and sped up the curving drives of Lookout Mountain.

At a darkened house on the brow of the mountain, overlooking Georgia and Alabama, the car pulled up. Beauregard spoke a word to the driver, got out and went to the front door. Behind him the car's lights went out, and it crunched quietly into the shadowed driveway.

There was light in the house when Piquette opened the door to him. She held out her hands in

welcome, and her smile was as sweet as sunshine on dew-sparkling fields.

Piquette's skin was golden, like autumn leaves, with an undertone of rich bronze. Her dark eyes were liquid and warm, and her hair tumbled to her shoulders, a jet cascade. She was clad in a simple white dress that, in the daring new fashion, bared the full, firm swell of her breasts.

Beauregard took her in his arms, and as her lips clung to his he felt a grey old man, as grey as his braid-hung uniform. He held her away from him. In the mirror behind her he saw his face, stern, weather-beaten, light-mustached, with startling blue eyes.

"Piquette, what on earth is this folly?" he demanded, kicking the door shut behind him. "Don't you know I'm moving on Tullahoma in the morning?"

"You know I wouldn't call you unless it was important, Gard, as much as I long for you." When she talked, her delicately molded face was as mobile as quicksilver. "I've found something that may end the war and save my people."

"Dammit, Quette, how many times have I told you they are not your people? You're a quadroon. You're three-fourths white, and a lot whiter in your heart than some white women I've seen."

"But I'm one-fourth Negro, and you wouldn't have married me, for that, even if you'd known me before you met your Lucy. Isn't that right, Gard?"

"Look, Quette, just because things are the way they are . . ."

She hushed him with a finger on his lips.

"The Negroes are my people, and the white people are my people," she said. "If the world were right. I'd be a woman instead of a thing in between, scorned by both. Can't you see that, Gard? You're not like most Southerners."

"I am a Southerner," he answered proudly. "That I love you above my own blood makes no difference. No, I don't hate the black man, as so many Southerners do—and Northerners too, if the truth were known. But, by God, he's not my equal, and I won't have him ruling over whites."

"This is an old argument," she said wearily, "and it isn't why I called you here. I've found a man—or, rather, a man has found me—who can end this war and give my people the place in the world they deserve."

Beauregard raised his bushy eyebrows, but he said nothing. Piquette took him by the hand and led him from the hall into the spacious living room.

A Negro man sat there on the sofa, behind the antique coffee table. He was well-dressed in a civilian suit. His woolly hair was grey and his eyes shone like black diamonds in his wizened face.

"General Courtney, this is Mr. Adjaha," said Piquette.

"From where?" demanded Beauregard warily. Surely Piquette would not have led him into a trap set by Northern spies?

Adjaha arose and inclined his head gravely. He was a short man, rather squarely built. Neither he

nor Beauregard offered to shake hands.

"Originally from the Ivory Coast of Africa, sir," said Adjaha in a low, mellow voice. "I have lived in the United States . . . in the Confederacy . . . since several years before the unfortunate outbreak of war."

Beauregard turned to Piquette.

"I don't see the point of this," he said. "Is this man some relative of yours? What does his being here have to do with this crazy talk of ending the war?"

"If you will excuse me, General," said Adjaha, "I overheard your conversation in the hall and, indeed, Piquette already had informed me of the dissension in your heart. You would be fair to my race in the South, yet you fear that if they had equality under the law they would misuse their superiority in numbers."

Beauregard laughed scornfully.

"See her, old man, if you think I'm ripe to lead a peace and surrender movement in the South, you're wasting your time," he said. "The South is committed to this war, and so be it."

"I ask only that you listen for a brief time to words that may be more fruitful than a few hours in a quadroom's bedroom," said Adjaha patiently. "As I said, I am from the Ivory Coast. When the white man set foot in that part of Africa, he found a great but savage kingdom called Dahomey: the ancestral home of most of the slaves who were brought to the South.

"Before Dahomey there was a civilization whose roots struck

back to the age when the Sahara bloomed and was fertile. Before the great civilizations of Egypt, of Sumer and of Crete was the greater civilization of the African black man.

"That civilization had a science that was greater than anything that has arisen since. It was not a science of steel and steam and atoms, but a science of men's minds and men's motives. Its decadent recollections would have been called witchcraft in medieval Europe; they have been known in the West as voodoo and superstition."

"I think you're crazy," said Beauregard candidly. "Quette, have you hired a voodoo man to hex me?"

"Be tolerant, General," admonished Adjaha in his mellow voice. "Many of you in the West are not aware of it, but Africa has been struggling back to civilization in the Twentieth Century. And, while most of its people have been content to strive toward the young ways of the West, a few of us have sought in our ancestral traditions a path to the old knowledge. Not entirely in vain. Look."

Like a conjuror, he produced from somewhere in his clothing a small carved figure. About six inches high, it was cut from some gleaming black stone in the attenuated form so common to African sculpture. It dangled from Adjaha's fingers on a string and turned slowly, then more swiftly.

As it spun, the light from the chandelier flashed from its planes and curves in a silvery, bewildering pattern. Beauregard felt his eyes drawn to it, into it, his very brain

drawn into it.

Beauregard stood there, staring at the twirling image. His eyes were wide open and slightly glazed. Piquette gave a little, frightened cry.

"It's all right, my dear," said Adjaha. "He's just under hypnosis. Your General Beauregard is the key that can unlock the past and the future for us."

**T**HERE WAS an insistent command beating against Beauregard's brain: "Go back . . . go back . . . go back . . ."

It was a sunny summer morning in Memphis. Beauregard Courtney, Nashville attorney and adjutant general of Tennessee, stepped out of the elevator of the Peabody Hotel and walked across the wide, columned lobby to the newsstand. He did not go by the desk; Beauregard preferred to keep his room key in his pocket when he stayed in a hotel.

He bought a copy of *The Commercial Appeal* and dropped onto one of the sofas nearby to read the headlines. As he had suspected, the story in which he was involved took top play.

**SOUTHERN GOVERNORS  
GATHER HERE TODAY TO  
DISCUSS 'REVOLT.'**

It was a three-column head at the right of the page. *The Commercial* wasn't as conservative as it had been when he was a boy, but it still didn't go in for the bold black streamers, he thought approvingly.

He glanced at the other front

page headlines: **MERIDIAN  
QUIET UNDER FEDERAL  
REGIME . . . NEHRU BLASTS  
RACE UNREST IN MISSIS-  
SIPPI . . . PRESIDENT URGES  
SOUTH: 'ABIDE BY LAW' . . .**

Beauregard sighed. He was caught up in the vortex of great events.

He arose, folding his paper, and walked toward the stairs leading down to the grill. The governors' meeting was not until eleven o'clock. After breakfast, he would talk with some of the Memphis political leaders and telephone Governor Gentry. He was in a delicate position here, representing a state that did not think exactly as he did.

As he reached the steps, a dark-haired woman, dressed in misty blue for the morning, approached from the elevators. He stepped aside to let her precede him. Then they recognized each other.

"Piquette!" he exclaimed. "I didn't know you were in Memphis."

The quadroom flashed a smile and a sparkle of black eyes at him.

"I knew you were here," she said, gesturing at his newspaper.

He hesitated, uncertain whether she was just countering his own remark or telling him that he was her reason for being here.

"Will you have breakfast with me?" he invited.

"Yes," she answered, and gave him a sidelong glance, "if it's in my room."

He laughed, rich and full-throated. She took his arm and they went back to the elevators together. His heart was lighter now

that Piquette was in Memphis with him . . .

There were eleven Southern governors at the meeting. Governor LeBlanc of Louisiana, like Governor Gentry of Tennessee, had sent a representative in his stead. As representative of the host state, Beauregard opened the meeting, welcomed the visitors and turned over the chairmanship to Governor Dortch of Georgia.

"Gentlemen, there is no point in delaying our principal discussion," said Dortch. "Within the past week, federal troops have moved into a Mississippi city to enforce the Supreme Court's infamous integration decree. For the first time since Reconstruction Days, hostile soldiers are on the soil of a sovereign Southern state. The question before us is, shall we bow to this invasion of states' rights and continue our hopeless fight in the courts, or shall we join hands in resisting force with force?"

Chubby Governor Marsh of Alabama rose to his feet.

"There wouldn't have been any federal troops if it hadn't been for this extremist segregation organization, the Konfederate Klan," he said heavily. "I belong to a segregationist organization myself: I suppose most of you do, because you got elected. But lynching and rioting and burning homes and schools is no way to resist integration. Mississippi's national guard should have been in Meridian."

"If I'd mobilized the guard, I'd have had a revolt on my hands," said Governor Ahlgren of Mississippi mildly. "Two-thirds of the

guardsmen belong to the Klan."

"I'll go along with the majority, of course," said Marsh, "but I think this proposed Pact of Resistance can lead only to full-fledged military occupation of the South."

Almost without willing it, Beauregard arose. Governor Gentry had counselled caution, listening instead of talking, but a fire burned deep in Beauregard. Somehow the laughing face of Piquette as he had last seen her misted his eyes. A powerful urging was on him to beat his breast and cry: "The white man must rule . . .!"

Beauregard opened his eyes and looked around him dazedly. He was sitting in the parlor of Piquette's house on Lookout Mountain. Piquette leaned against his shoulder, patting his hand, and Adjaha stood before him with hands clasped behind his back. Adjaha looked like a worried dwarf.

"You remember that you relived your participation in the governors' conference in Memphis?" asked Adjaha.

"Yes," said Beauregard, rubbing his forehead. "You black scoundrel! You hypnotized me with that pagan doll!"

"Yes, sir," admitted Adjaha. "It took me a long time to trace the key to this war, and when I found you were that key I knew I could reach you only through Piquette. It was your impassioned speech before the governors that turned the South to war instead of peace."

"Nonsense!" said Beauregard, sitting up straighter. "I just expressed what the majority was thinking.

They'd have agreed on the Pact of Resistance even if I had objected."

"The man of destiny sometimes doesn't realize his own influence," said Adjaha drily. "Many factors were concentrated in you that day besides your own native persuasiveness. No, General, your stand swung the governors to the Pact of Resistance. Announcement of that pact spurred the Confederate Klansmen to massacre the federal troops at Meridian. That brought the federal proclamation placing Mississippi under martial law and the subsequent mobilization and revolt of the South."

"Perhaps so," conceded Beauregard wearily. "Perhaps I did wrong in not following Governor Gentry's instructions and keeping my mouth shut. But I spoke my convictions, and it's too late now."

"That is not necessarily true, General," said Adjaha. "Time is a dimension, and it is as easy to move east as it is to move west. A better simile: one can move upward as well as downward, but the presence of gravitation makes special skills necessary."

Beauregard shook his head.

"A good theory, but good only as a theory," he said. "If it were more than that, the law of cause and effect would be abrogated."

"No, it works both ways. The present can influence the past as much as it influences the future, or as much as the past influenced it. Thus, through the past, the present can influence itself.

"In my native land, the Ivory Coast of Africa, we believe in fan-shaped destiny, General. At every

instant where a choice is made, a man may take one of many paths. And those who had the old knowledge of my people could retrace their steps when the wrong path was taken, and choose another path."

"But I can't," said Beauregard. "If I could, I don't know anything that could have changed what I said and did that day in Memphis."

"Tell me, General, how long had Piquette been your mistress before the Memphis Conference?" asked Adjaha.

"About three years," answered Beauregard, too puzzled at this change of tack to be offended.

"Even if you were a psychologist instead of a general, it would be difficult for you to probe the motivation of your own heart," said the Negro. "Piquette was your reason for voting for war, instead of peace!"

Beauregard sprang to his feet angrily.

"Look, damn you, don't feed me your voodoo doubletalk!" he thundered. "If it were Piquette alone I had to consider, don't you think I'd have advocated equality for the black race?"

It was Piquette's voice that sobered him, like a dash of cold water.

"And yet you try to tell me I'm not a Negro, Gard," she said quietly.

The anger drained from him. He slumped back to the sofa.

"Ah, yes, the perversity of a man whose mind and heart are at odds!" exclaimed Adjaha softly. "You love Piquette, yet your pride tells you

that you should not love a woman with Negro blood in her veins. For that you must be aggressive, you must prove the moral code taught you as a child was not wrong.

"You went to the Memphis Conference with Piquette's kisses still sweet on your lips, and because of that your conscience demanded that you stand forth as a champion of the white man's superiority."

"So be it, then, you black Freudian," retorted Beauregard cynically, an angry gleam in his blue eyes. "The die was cast two years ago."

"The die shall be recast," said Adjaha firmly. "Piquette must not have gone to Memphis. She must not have been your mistress before you went to Memphis."

With this, he walked swiftly from the room. Beauregard looked at Piquette, his eyes half amused, half doubtful. She smiled at him.

"What he does is out of our hands," she said. "It's still early, Gard."

He took her in his arms.

**G**OVERNOR BEAUREGARD Courtney of Tennessee sat in the tall chair behind the governor's desk and twiddled a paperweight given him, if his recollection was accurate, by the Nashville Rotary Club. His wife, Lucy, a handsome woman whose dark brown hair was just beginning to grey, stood by the door with an armload of packages.

"Beauregard, the people moving into that vacant house down on Franklin Road are Negroes," she said indignantly. "I want you to do something about it. The very idea!

That close to the mansion!"

"They aren't Negroes," he said patiently. "They're my secretary and her mother. My secretary is a quadroon and her mother's a mulatto. It's convenient to have them live so close, in case I need to do some weekend work at home."

"A quadroon!" Lucy's eyes widened. "Which of your secretaries is a quadroon?"

"Piquette. And don't tell me I shouldn't have employed her. The Negro vote is important in this state, and if I'd hired a full-blooded Negro a lot of the white vote would turn against me."

"Well, I never! You've become more and more of an integrationist ever since you got into politics, Beauregard."

"Maybe I've gained some wisdom and understanding," he replied. "That is not to say I'm an 'integrationist.' I'm still doing my best to get it done slowly and cautiously. But the only way the South could have resisted it was by open revolt, which would have been suicide. And I must say the Southern fears have not been realized, so far."

Lucy sniffed.

"I have to speak at a woman's club meeting tonight," she said, opening the door. "Are you going home now?"

"No, Sergeant Parker will drive you home and come back for me. I'm going to eat downtown and clean up some work in the office tonight."

She left, and Beauregard leaned back in his chair thoughtfully, having just told his wife a lie.

They had no children to be affected by it, but Lucy would never become reconciled to integration. She blamed him for his part in turning the Memphis Governors Conference away from the proposed Pact of Resistance five years ago.

Beauregard had had his doubts about speaking out against resisting the federal government with the threat of force. Now he thought he had done right: war would have been terrible, and the South could not have won such a war. And it was his statesmanship at that conference, and Governor Gentry's lavish praise of it, that had set him up to succeed Gentry as governor.

Beauregard sighed peacefully. He had done right and the world was better for it.

The door opened, and Piquette's golden, black-eyed face peeked around it.

"It's four-thirty, Governor," she said. "Will you want me for anything else?"

"Not just now," he said, smiling. She smiled back.

"Room 832," she said in a voice that was hardly more than a whisper. Then she was gone.

Beauregard's blood quickened, but he was disturbed. This that he was going to do was not right. But what other course would a normal man take, when his wife was so estranged that she had become nothing more than a front for the married happiness the people demanded of their governor, a figure-head who lived in another wing of the mansion?

He had met Piquette eight years

before, briefly, when he was a staid, climbing Nashville lawyer. Not knowing she was of mixed blood then, he had been drawn to her strongly. He had thought her drawn also to him, but for some reason their paths parted and he had not seen her again until after his election to the governorship.

She had been among a group of applicants for state jobs, and Beauregard had happened to be visiting the personnel office the day she came in. He employed her in the governor's office at once. She was a good secretary.

Nothing untoward had passed between them in that year she had worked as his secretary. In nothing either of them said or did could any members of his staff have detected an incorrect attitude. But there were invitations of the eyes, caresses of the voice . . . and a week ago their hands had touched, and clung, and he had found she was willing . . .

Beauregard heaved himself to his feet with a sigh. Briefly, he felt sorry for Lucy. He would eat supper downtown tonight, but it would be in Room 832.

Beauregard awoke slowly, with a hand shaking his shoulder. Reluctantly he abandoned a dream in which the South had remained at peace and he was governor of his state.

Piquette's flower-like face hovered over him in the dimness. She rested on one elbow in the big bed beside him and shook his shoulder.

"Gard!" she said urgently. "Wake up! It's after midnight."

"Oh, damn!" he groaned, rolling out of the warm covers. "And the Northerners will attack today if my intelligence service hasn't gone completely haywire."

"Get dressed," she said, dropping her bare feet to the floor and smoothing her nightgown over her knees. "I'll fix you some coffee."

He pulled on his uniform, the Confederate grey with the stars glittering on the shoulders, while she plugged in the hotplate and started the coffee. Outside, the eastern sky was streaked with dim light, against which the sleeping houses of Winchester thrust up stark silhouettes.

She sat across the little table from him, a flowered robe drawn around her, while he sipped his coffee and thrust the last wisps of dreams from his head.

"Quette," he said, "I want you to pack and get out of here. Before daylight, if you can get ready. Head south, for Birmingham. I'll send a staff car around for you as soon as I get to headquarters."

"I don't want to leave you, Gard," she objected.

"You've got to, Quette. We can't hold these Federals. We're in a bulge here, and the only reason they haven't cracked us out yet is Chattanooga holding our right flank."

He kissed her goodbye, a long kiss, and strode down the street to the Franklin County courthouse, where he had set up headquarters for the Army of Middle Tennessee when the Union troops had forced them out of Nashville. The place was a beehive of activity.

The eastern sky glowed red over the Cumberlands and the artillery was thundering in the north when General Beauregard Courtney rode out toward the front. He had his driver park the staff car on a slight rise overlooking his troop formations.

The war was going badly for the South, and Beauregard unhappily took much of the responsibility on himself. Perhaps he had been wrong in making that impassioned speech at the Governors Conference in Memphis which, he was sure, had swung the weight of opinion in favor of the Pact of Resistance. Certainly he had been wrong in recommending a farflung northern battle line, at the start of the war, which stretched from Paducah, Kentucky, north of Nashville to Knoxville, with its eastern anchor on the Cumberlands.

It had been his idea that a defensive line so far north would give the South more time to mobilize behind it, would hold the rich industries of Tennessee for the South, and would give the South a jumping off place for a strike across the Ohio River. But the North had mobilized faster, and Northern armies had crunched down through the Southern defenses like paper.

Now all West Tennessee and a segment of Mississippi was in Federal hands. The Southern defense in East Tennessee had been forced back to the mountains around Chattanooga. And his own troops had fallen back from stand after stand after the Battle of Nashville. Even now, Federal armour was reported to have crossed the Tennes-

see River and be heading south-eastward toward Columbia and Lewisburg.

He hoped Piquette had left Winchester by now. Perhaps he should not have kept his quadroom mistress with him through the constant danger of defeat, but with Lucy way down in New Orleans . . .

As the morning wore on, the guns thundered below him and the tanks rumbled across the Tullahoma plain, spouting fire. Several times his sergeant urged him to withdraw, out of danger, and return to headquarters, but he stayed. He wanted to direct this battle personally, giving his orders over the car radio.

A great pall of smoke hung over the battlefield. Then the attack came, wave after wave of blue-clad infantry, pouring down from the north. Tanks and planes supported them, and atomic artillery shells burst in the Southern trenches. The grey lines began to crumble.

"Colonel, throw in the 112th and the armored reserve, and let's try to get an orderly withdrawal to the Alabama line," Beauregard ordered into his microphone. He turned to his driver. "Sergeant, I think you're right. We'd better get out of here."

The staff car swung around and headed back toward Winchester over the bumpy highway. As it left the rise, Beauregard swore fervently and reached for the microphone. From the west came a great cloud of dust and a mass of rumbling tanks. The Federals had broken through the left flank at Lynchburg.

Jet planes streaked overhead from the north, flying low. The flash of exploding bombs and rockets was visible in Winchester, ahead of them.

Speaking swiftly into the microphone, Beauregard glanced out of the car's back window.

"Sergeant!" he yelled. "Strafers!"

The driver twisted the wheel so quickly Beauregard was thrown against the door. The speeding car leaped a ditch and bounced into the fields.

Out the window, Beauregard saw the jet swooping down at them like a hawk. It was a speck in the sky, and almost instantly it was on them in a terrifying rush.

He saw the flare of the rockets leaving the plane's wings, he felt the shock of a thunderous explosion, and the blackness engulfed him.

Beauregard opened his eyes painfully. His head ached, and his left arm hurt horribly.

He was lying on a rumpled bed in his torn uniform. Piquette and a wizened, very black Negro man were standing beside the bed, looking down at him anxiously. He recognized that he was in the house in Winchester, in the room where he had spent last night . . . or was it last night?

"Quette!" he croaked, trying to sit up. He couldn't make it, and he gasped at the pain in his arm. "I thought I told you to leave Winchester."

"I didn't want to leave you, Gard," she answered softly. "And

it's lucky I didn't. Some men on an ammunition truck found your car. Your driver was killed and your arm blown half off. They brought you here."

"Dammit," he complained, "why didn't they take me to the base hospital?"

"Because the base hospital took a direct hit from a bomb."

That startled Beauregard into the realization that there was no sound of firing, no crash of bombs, outside. There were men's shouts and the normal sounds of a town occupied by the military. Had the Union forces been repulsed by some miracle?

"Well, for Pete's sake, call the medics and get me to a field hospital," he ordered. "And you head south for Birmingham, like I told you to."

"Gard," she said soberly, "I thought it ought to be your decision, and not mine. If we call the medics, they'll be Federal troops. Winchester was captured hours ago, and it's just chance that they haven't entered this house and found you before now."

Beauregard lay silent, stunned. The strange man beside the bed spoke for the first time.

"It is not his decision," he said. "There is work that I must do which may be delayed forever if he is captured."

"This is Adjaha, a friend of mine," said Piquette. "He came to Winchester to see you. He thinks he knows a way to end the war."

"Poppycock!" snorted Beauregard weakly.

"General Courtney," said Adjaha

intensely, "you spent last night with Piquette. Where did you spend the night? Here or in Chattanooga?"

Beauregard opened his mouth to say, "Here, of course." Then he stopped. Suddenly a vision, almost a memory, rose up before him and he could not be sure. There was a chandelier, and a black voodoo charm . . .

"You do remember some of it!" exclaimed Adjaha delightedly.

"It seems that I dreamed the South was winning, and I was going to drive on Tullahoma, and I went to Chattanooga to see Piquette," said Beauregard slowly. "But it's mixed up in my mind with another dream, in which there was no war at all, and I was elected governor . . ."

"Those were not dreams," said Adjaha. "They happened and yet they did not happen."

"I remember you in a dream," said Beauregard faintly, "and words about 'fan-shaped destiny' . . ."

"You have to understand this or I can do nothing," said Adjaha hurriedly. "The South was doing well, although it could not have won in the end. You were preparing to advance on Tullahoma, and you did go to Chattanooga last night to see Piquette. This happened."

"But it didn't happen, because I utilized the ancient knowledge of my people, involving dimensions beyond time, to change the factors that led to it. Decisions of different people were influenced differently at a dozen points in the past so that Piquette did not become your mistress before you went to Memphis,

and your own emotional attitude was changed just enough to steer you on a different course.

"Then the other things you call a dream happened instead. There was peace instead of war."

"Then how is it that we actually have war and defeat?" demanded Beauregard, his voice a little stronger.

"Piquette," said Adjaha gravely. "You found her again, and she became your mistress after you were governor."

"But I remember that now!" exclaimed Beauregard. "That's three years in the future . . . and there was no war."

"It is difficult to understand, but the future can change the present," said Adjaha. "General Courtney, even more than I realized at first you are the 'man of destiny,' the key to war or peace in the South, and Piquette is the key to your own emotions.

"Try to comprehend this: *you cannot love Piquette in a South that is at peace!* The whole social fabric in which you were nurtured demands of you that a woman of Negro blood cannot be your paramour unless she is socially recognized as an inferior and, in a very real sense, not your co-equal lover but the servant of your pleasure. When Piquette became your mistress, even five years after the decisive moment of the Memphis Conference, the entire framework of time and events was distorted and thrown back into a sequence in which the South was at war. This time, unfortunately for you, a slightly different time-path was

taken and the South does not fare so well."

"Then you've failed, and things are worse than they were if you hadn't interfered," said Beauregard.

"No, I must try again," said Adjaha. "Piquette's mother must never have brought her to Nashville as a child, so there will be no chance of your ever meeting her at all."

There was a thunderous knocking at the front door. Federal troops who were investing the town at last had reached this house. Adjaha gave Beauregard one sympathetic look from his dark eyes, and slipped quietly from the room, toward the rear of the house.

The knocking sounded again. Beauregard lay in a semi-daze, his blood-encrusted left arm an agony to him. Through the haze over his mind intruded a premonition that bit more deeply than the physical pain: Never to know Piquette?

He clutched her hand to his breast.

"Quette," he whimpered.

"Be still, darling. I won't leave you," she soothed him as a mother soothes her child. Her cool hand caressed his cheek.

UNITED STATES Senator Beauregard Courtney of Tennessee crossed Canal Street cautiously and plunged into the French Quarter of New Orleans with a swift, military stride.

He had always urged Lucy that they take a trip to New Orleans, but she always had demurred; she said the city reminded her of war

and trouble, somehow. Now he had been invited to be the principal speaker at the annual banquet of the Louisiana Bar Association tonight. He had welcomed the opportunity to make the trip, without Lucy.

It had been ten years since his voice at the Memphis conference had swung the South away from war and onto the path of peace. His statesmanship on that occasion had brought him great honour. He had served a four-year term as governor of his state and, on leaving that office, had been advanced to the U. S. Senate. His light-coloured hair and mustache were beginning to grey slightly.

Lucy had been a good wife to him, even though there had been that near-estrangement when he was so busy as governor. Perhaps she still did not agree with him entirely on his acceptance of the fact of racial integration without bitter resistance, but she was more tolerant now of his sincerity than she had been once. He was sorry she was not here: she would have enjoyed the Old World atmosphere through which he walked.

Beauregard moved up fabled Bourbon Street, past Galatoire's and the Absinthe House. He stared with interest at the intricate ironwork of the balconies that overhung the narrow sidewalk, at the bright flowers that peered over the stone walls of gardens, at the blank wooden doors flush with the sidewalk.

How far, he wondered, was he from Rampart Street, where the Creoles had kept their beautiful quadroon mistresses in one-story

white houses in days long gone? He knew nothing of the *Vieux Carre*, and had no map.

As he penetrated more deeply into the French Quarter, he began to pass the barred gates that stopped the dim corridors leading back to ancient courtyards. These fascinated him, and he tried several of the gates, only to find them locked.

He never knew later, studying the map, whether the street he had just crossed was Toulouse, St. Peter or Orleans, when he came upon one of those gates that stood ajar.

Beauregard did not hesitate. He pushed it open and paced eagerly down the shadowed corridor until he emerged into the sunlit courtyard.

There was a stone statue, grey and cracked with age, in the midst of a circular pool in the center of the courtyard. Flower-lined walks surrounded it. The doors that opened into the courtyard were shadowed by balconies, on which there were other doors, and to which steep flights of stairs climbed.

On a bench beside the pool sat a woman in a simple print dress. Her skin was tawny gold and her hair was black and tumbled about her shoulders. Her eyes were black and deep, too, when she raised them in surprise to the intruder. She was beautiful, with a poignant, wistful beauty.

"I'm sorry," said Beauregard. "The gate was open, and I was curious."

"Mrs. Mills forgot to lock the gate," she said, smiling at him. "All of us who live here have our keys and are supposed to lock the

gate when we go out. But Mrs. Mills forgets."

"I'll leave," he said, not moving.

"No, stay," she said. "You're a visitor to town, aren't you? There's no reason why you can't see a French Quarter courtyard, if you wish."

Beauregard moved closer to her.

"I'm Beauregard Courtney," he said. For some reason, he omitted the "Senator."

"Gard," she said in a low voice, her big eyes fixed on his face. "Gard Courtney."

Somewhere in the deep recesses of his mind, faint memory stirred. Was it the memory of a dream?

"Have I dreamed that we met before?" he asked slowly. "Piquette?"

"You know!" she exclaimed, her face lighting gloriously. "I didn't dream alone!"

"No," he said. "No. You didn't dream alone. Your name is Piquette, isn't it? I don't know why I said that. It seemed right."

"It is right."

"And you live here?"

"Up there," she said, and pointed to one of the doors that looked out on the balcony.

Beauregard looked up at the balcony and the door, and he knew, as though he had prevision, that before he left the courtyard he would go through that door with Piquette.

He took her hands in his.

"I'll never let you leave me," he murmured.

General Beauregard Courtney sat under the open-sided tent that

was his field headquarters and stretched long legs under the flimsy table. He gazed morosely out toward Tullahoma in the north, where the trenches stretched endlessly from east to west and only an occasional artillery shell broke the quiet of the battlefield.

Stalemate.

"I thought trench warfare went out with World War I," he growled to his executive officer.

"No, sir. Apparently not, sir," replied Colonel Smithson correctly, not interrupting his preparation of tomorrow's orders.

Stalemate. The Northern armies and the Southern armies had collided with great carnage on that battlefield. Fighting had swayed back and forth for weeks, and at last had settled down to a stubborn holding action by both sides.

That had been months ago. Now trenches and fortifications and tank traps extended across southern Tennessee from the Cumberland to the Mississippi. Occasional offensives came to naught. Only the planes of both sides swept daily over the lines, bombarding the rear areas, reducing the cities of Tennessee to rubble.

Beauregard toyed with a pencil and listened idly to the news over the little radio at his elbow. It was a Nashville station, and Nashville was held by the North, but he had learned how to discount the news from the battlefield.

". . . And our planes destroyed thirteen Rebel tanks and an ammunition depot in a mission near Lexington," the announcer was saying. "A gunboat duel in the

Mississippi River near Dyersburg was broken off after severe casualties were inflicted on the Rebel crew. Our armored troops have advanced farther into the Texas Panhandle.

"Wait. There's a flash coming in . . ."

There was a momentary pause. Beauregard bent his ear to the radio. Colonel Smithson looked up, listening.

"My God!" cried the announcer in a shaky voice. "This flash . . . a hydrogen bomb has exploded in New York City!"

Beauregard surged to his feet, upsetting the table. The radio crashed to the ground. The other men in the tent were standing, aghast.

"It isn't ours!" cried Beauregard, his face grey. "It's a Russian bomb! It must be . . .!"

The voice on the fallen radio was shouting, excited, almost hysterical.

" . . . The heart of the city wiped out . . . Number of dead not estimated yet, but known to be high . . . Great fires raging . . . Radio-active fallout spreading over New Jersey and eastern Pennsylvania . . .

"Here's a bulletin: the President accuses the Rebel government of violating the pact not to use large nuclear weapons. Retaliatory action has already been initiated . . .

"Here's another flash: Detroit and Chicago have been H-bombed! My God, has the world gone mad? There's a report, unconfirmed, that the Detroit bombers came from the north . . ."

"They can't believe we did it!"

muttered Beauregard. All the men in the tent, irrespective of rank, were clustered around the radio. No one thought to pick it up from the ground.

A staff car drove in from the south and rocked to a stop in front of the headquarters tent. Beauregard hardly noticed it until Piquette got out, followed by a slight, grey-haired Negro man in civilian clothes.

Beauregard strode out of the tent. The car radio was on loud, and the same announcer was babbling over it.

"Quette, what are you doing out here?" he demanded.

"Gard, this is Adjaha, a friend of mine," she said hurriedly. "I couldn't wait for you to come back to town tonight. I had to get him out to see you before it was too late."

"Dammit, it is too late," he growled. "It's too late for anything. Haven't you been listening to that damn radio?"

"This is extremely important, General," said Adjaha in a mellow voice. "If I may impose on you, I'd like to talk with you for a short while."

Beauregard frowned and glanced at Piquette. She nodded slightly, and her face was anxious.

"I suppose I have plenty of time to talk," he said heavily. "We can do nothing but sit here with useless armies while the country tears itself apart. Sergeant, turn that damn car radio off and go bring some chairs out here. You can listen to the radio in the tent."

They sat, the three of them, and

Adjaha talked. Beauregard listened skeptically, almost incredulously, but something within him—not quite a memory, but an insistent familiarity—caused him to listen. He did not believe, but he suspended disbelief.

"So you see, General," concluded Adjaha, "there is some drive within you and Piquette—call it fate, if you wish—that draws you together. When it was arranged that she did not become your mistress before the Memphis Conference, she did after you became governor. When it was arranged that her parents did not move to Nashville with her, you were drawn to New Orleans to meet her. Apparently you must meet if there is any possibility that you meet, and when you meet you love each other.

"And, though you can't remember it, General—for it didn't happen, even though it did—I explained to you once, on this very day, that you cannot love Piquette in an unrebelling and peaceful South."

"If we were fated to meet, I'm happy," said Beauregard, taking Piquette's hand. "If these fantastic things you say were true, I still would never consent to not having met Piquette."

"But you must see that it's right, Gard!" exclaimed Piquette, surprisingly.

"Quette! How can you say that? Would you be happy if we were never to know each other?"

She looked at him, and there were tears in her eyes.

"Yes, Gard," she said in a low voice, "because . . . well, Adjaha

can see a little of the future, too. And on every alternate path he sees . . . Gard, if the South is at war, you'll be killed before the war ends!"

"We can't take any chances this time, General," said Adjaha. "Should events be thrown back into a path that leads to war again, this time you might be killed before I could reach you. Piquette's parents must never have met. *She must never have been born!*"

Suddenly, Beauregard believed. This quiet little black man could do what he said.

"I won't permit it!" he roared, starting to his feet. "Damn the South! Damn the world! Piquette is mine!"

But Adjaha, moving like lightning, was in the staff car. Its motor roared, it swung in a cloud of dust and accelerated toward the south.

"Sergeant! Colonel! Get that stolen staff car!" Beauregard belled. He whipped out his service pistol and fired two futile shots after the diminishing vehicle.

The general's staff boiled out of the tent. They milled around a minute, shouting questions, before piling into two command cars and giving chase to the disappearing staff car.

Beauregard glowered after them. Then he took Piquette's hand and they walked together into the empty tent.

" . . . Here's a late flash," said the radio on the ground. "Birmingham has been H-bombed. Our planes are in the air against the Rebels . . ."

Beauregard imagined the ground trembled. Instinctively he looked toward the south for the radioactive mushroom cloud. Then he swung back to Piquette.

"Quette, he can't do it," said Beauregard. "He's a voodoo fraud."

She looked at him with great, dark eyes. Her lips trembled.

"Gard," she whispered like a frightened child. "Gard, aren't there other worlds than this one . . .?"

She crept into his arms.

Colonel Beauregard Courtney sat on the terrace of his home in the suburbs of Nashville and enjoyed the warmth of the sun on his grey head. The steady hum of automobiles on the superhighway half a mile away was a droning background to the songs of birds in the trees of his big back yard.

The "Colonel" was an honorary title bestowed on him by the governor, for Beauregard never had worn a uniform. He had been Governor Gentry's representative at the fateful Memphis Conference forty years ago, he had been governor of his state, he had been United States senator from Tennessee, he had been chief justice of the state supreme court. Now he preferred to think of himself as Beauregard Courtney, attorney, retired.

Where was Lucy? Probably sitting in front of the television screen, nodding, not seeing a bit of the program. She should be out here in this glorious sunshine.

Beauregard's gardener, a wizened little Negro man, came around the

corner of the house.

"Adjaha, you black scoundrel, why don't you die?" demanded Beauregard affectionately. "You must be twenty years older than I am."

"Fully that, Colonel," agreed Adjaha with a smile that wrinkled his entire face. "But I'm waiting for you to die first. I'm here to keep watch over you, you know."

He picked up the hoe and went around the house.

Curious thing about Adjaha. Beauregard never had understood why an able, well-educated man like Adjaha, in a free and successfully integrated society, would be content to spend his whole life as gardener for Beauregard Courtney.

Beauregard leaned back comfortably in his lawn chair and thrummed his thin fingers on its wooden arm. Absently he whistled a tune, and presently became aware that he was whistling it.

It was a haunting little melody, from long ago. He didn't know the words, only one phrase; and he didn't know whether that was the title or some words from the song itself, that song of old New Orleans: "*. . . my pretty quad-roon . . .*"

"Piquette," he thought, and wondered why that name came to mind.

Piquette. A pretty name. Perhaps a name for a pretty quadroon. But why had that particular name come to mind?

He never had known a woman named Piquette.

**E N D**

*The problem was enough to drive the army into a furor. It was  
the old classic about an immovable object meeting the  
irresistible force. Something just had to give. . .*

# OPERATION GOLD BRICK

BY WALTER S. TEVIS, JR.

**T**WO ARMY Engineers found it while drilling a hole through one of the Appalachian Mountains, in the Primitive Reservation, on a lovely spring day in 1993. The hole was to be used for a mono-rail track; and although in 1993 it was very simple to run mono-rail lines *over* mountains, it was also quite easy to drill large, straight holes through almost anything; and the U. S. Army liked to affect the neatness of straight lines. So the Engineers had set up a

little converter machine on a tripod, pointed it, and proceeded to convert a singularly neat hole, twenty-two feet in diameter, in the side of the mountain. At first the mountain converted nicely, the hole tunnelling along at an efficient thirteen feet per hour; and the Engineers, whose names were George and Sam, were quite pleased with themselves and rubbed their hands together with pleasure; while the little machine on the tripod hummed merrily,



*Illustrated by Ed Emsh*

birds sang, and wisps of brown smoke floated off from the mountain into an otherwise clear blue sky.

And then they found it. Or, rather, the converter did, by abruptly ceasing to convert. The machine continued to hum; but the little feedback-controlled counter, which normally clicked off the number of tons of material substance that had been converted into immaterial substance, stopped. The last wisps of smoke dis-

appeared from the mountainside. The two Engineers looked at one another. After a minute George picked a rock up from the ground, a large one, and threw it out in front of the lens of the machine. The rock vanished instantly. The one-tenth ton counter wheel trembled, and was still.

"Well," Sam said, after a minute, "It's still working."

George thought about this for a minute. Then he said, "I guess we'd better look at the tunnel."

So they shut the machine off, walked over to the hole in the mountainside and went in. Fortunately the sun was behind them and they had no difficulty seeing as they made their way down the glassy-smooth shaft—which needed no shoring since the converter had been set to convert part of the materials removed into a quite sturdy lining of neo-adamant. The shaft ended in a somewhat foreboding, twenty-two foot, black disk of unconverted mountain bowels. The two of them peered uneasily at this for a few minutes and then Sam said, suddenly, "What's this?" and knelt down to inspect a rectangle, goldish in color, about ten inches long and four high, which appeared to be engraved in the rock at the dead end of the tunnel.

"Let me see," George said, stooping beside his co-scientist and pulling from his pocket a pocketknife, with which he proceeded to scrape around the edges of the rectangle. Some of the loose rock crumbled away, revealing that the rectangle was, actually, one surface of a solid bar of some sort.

He continued to scrape for a few minutes, removing enough rock to get a grip on the sides of the bar with his fingers, took a good hold and began to try to work the bar loose. The other Engineer helped him, and they pulled, strained, wedged and pushed for about ten minutes, until finally George said, "It won't move," and they stopped, perspiring. And it hadn't moved, not a millimeter.

The two of them glared, for a moment, at the smooth surface of the golden bar, which shone, lustrous, back at them. Then Sam said, "Let's get a pick."

"A pick?"

Sam, who knew something of Army history, was patronizing; "Yes. A kind of manual powered converter. No cut-off."

George was impressed. "But where?" he said.

"At U-10 Supply."

They left the uncompleted tunnel, stepped into their Minnijet, field model, officer-type helicopter and flew at a leisurely five hundred miles per hour to U-10. U-10 had been, before the 1980's Decade of Enlightenment, the University of Tennessee—the 1980's had held no illusions about what was important to the American Way of Life—and they landed their little olive-drab plastic craft in front of the library. Inside, the librarian, a young sergeant, was put into something of a tizzy at their request for a pick, and explained to them that the library shelves held only *weapons* of the past, and, as far as he knew, there was no such weapon as a *pick*. He sent them to the Captain.

The Captain knew what a pick was, all right; but when the two Engineers told him what it was for he called the Major. The Major was a tall, athletic officer with wavy hair, a very neat mustache, a firm, undaunted jaw, and clear eyes that looked squarely into the future. He smoked a pipe, of course, and was wearing a natty black field uniform with regulation crim-

son cummerbund and beret. His voice was friendly but there was a "no-nonsense" tone in it. "What's the deal, men?" he said out of the side of his mouth, the other side being engaged in biting, squarely, on his pipestem.

They told him about the gold bar.

"Interesting," he said, "Let's have a look-see" and he sent for a pick, a heavy-duty converter, a portable lighting system, two quarts of synthetic Scotch and three Privates. All of these were stowed away in a staff helicopter and then the three officers, the two Engineers and the Major, flew to the mountains. This being a staff helicopter, the trip took three and one half minutes.

At the mountain two of the Privates set up the portable lighting system in the tunnel while the other studied the manual that had come with the pick. The Major was first charmed, and then somewhat piqued, by the bar, after trying to prod it loose with his pipestem. The Private with the pick was called, and after some difficulty with determining the proper stance and grip for swinging that instrument—the Private was a recent recruit of only fourteen and naturally knew nothing whatever about manual converters of any sort—a few desultory swings were taken at the granite surrounding the bar. After a while the other two Privates joined in, alternating in swinging the pick, until, finally, a rough area of about two or three square feet had been hollowed out

around the bar, which was found at that time to extend only about four inches back into the mountain. Above the bar they noticed a sort of fissure, like a cicatrice, in the granite; and one of the Privates remarked that it looked like the mountain either had been split open to admit the bar from the top, or that, maybe, the bar had just been there and the mountain had grown up around it.

It was impossible to cut away the rock on the other side, so the three Privates got a strong grip on the bar and began to pull. Then the officers began to pull on the Privates. The bar stayed where it was. They pulled harder. The bar stayed. The Major took off his cummerbund and beret and began to sweat. The bar didn't move. The Major began to curse, pushed the others aside, grabbed the pick handle, gave a mighty heave, and hit the bar solidly with the point. There was no sound from the impact, and the pick did not rebound, nor did the bar move. The Major tried again. And again. Then they knelt and looked at the bar. It still gleamed. No scars.

The Major swore for five minutes. Then he said, "Who owns this mountain?"

George spoke up, "The Army, sir. Of course."

"Good," said the Major, beginning to look undaunted again. "We'll get at that son of a bitch."

"How, sir?"

"We'll convert this Goddamn mountain, that's how." The Major began wrapping his cummerbund back around his waist.

"The whole *mountain*?" Sam said, aghast.

"Level it." The Major dusted off his beret and replaced it.

Sam spoke up querulously, "But wouldn't that be . . . ah . . . mis-using our natural resources, sir?"

"Nonsense." This mountain belongs to the Army. It's not a natural resource. As a matter of fact, it's an eyesore. I order you to vaporize it."

So they vaporized the mountain. Since the converter could not cut through the bar they set it up—the heavy-duty one—to shear off the top of the mountain. Then they moved the machine around to each of the four sides and sliced them off. Their instruments were very accurate, and when the last wisp of smoke had drifted away there stood in the middle of a plain so smooth billiards could have been played on it, sitting on a neat, rectangular column of granite, four feet high, what was now plainly seen as a shiny, gold colored brick, its sides glittering in the evening sun.

The Major picked up the pick and walked slowly over to the column. There was a slight, almost unnoticeable, swagger in his walk. He hefted the pick slowly, carefully, braced himself, and took aim. "All right, you son of a bitch," he said, and then gave the pick a magnificent swing.

The brick didn't move.

The Major stood where he was, looking at the brick, for about three minutes. Then he said, softly, "All right. *All right!*"

He walked back to the converter

—which was sitting on its tripod nearby—and began to adjust its aim and elevation and set its dials, all very carefully. When he was ready he stood behind it, his feet planted firmly, his fists clenched, his lower jaw firm and jutting, his eyes squarely ahead, focused on the brick.

"*Now!*" he said, and pressed the switch. There was a small hum and a tiny puff of smoke and the little column of granite disappeared. The brick was now unsupported and the Major watched it, his eyes now betraying an intense gleam, waiting for it to fall to the earth. The Major waited.

The brick stayed exactly where it was, four feet above the ground, completely unsupported.

It took the Major a few minutes to realize that there was no use in waiting. He said nothing, however; but stepped over to the brick, looked at it a minute, and then reached casually over to it and pushed it, with his index finger. It didn't move. Then the Major sat down on the ground and began to cry, very softly, as the sun sank in the west and the birds, hushing, went back to their nests . . .

**T**HAT, OF COURSE, was only the beginning of it. Within two weeks the little plain that had once been a mountain was covered with multicolored plastic quonset huts through which moved so many people of such world-shaking importance that four gossip-columnists had to be flown in from New York and Los Angeles to handle the

overflow. Generals and Admirals abounded, offering careful and profound opinions freely; slim, dark, intense young men with impeccable dark civilian suits and carrying dark attaché cases held hurried, *sotto voce* conferences; newspaper reporters did "Profiles" of everybody. The weather held fair, the neighborhood abounded in divers kinds of nature: birdsong and waterfall, poplar and mountain daisy, which most of the visitors found quaint and novel, and a good time was being had by all.

In the midst of this activity floated the still shiny golden brick, unperturbed, apparently as oblivious of the meleé it had attracted as it was of the immutable laws governing the motion of masses: the laws of inertia and reaction, and the law of universal gravitation.

Some interesting things had been discovered about the brick. It was, for instance, completely impervious to any known form of radiant energy; it neither absorbed nor radiated heat; electron microscopes found its surface, on the atomic level, still smooth, metallic and shiny, without gaps, it apparently had no molecular—or, even, atomic—structure to speak of; it would conduct neither electricity, heat, nor anything else; and it obeyed no physical laws whatever. Thus far nine neo-adamant points, sharpened to sub-microscopic pointedness and under pressures ranging up to three hundred fifty thousand tons, had failed to make any scratches in its surface; and all had eventually cracked.

The Major had recovered most

of his old poise and undauntedness, although his eyes now seemed to face the future with some hint of trepidation, and he was assigned to Operation Gold Brick—as the Army had cleverly named it—in an advisory capacity. In fact it was he who gave voice to a notion that had been whispered about for several days. After the ninth neo-adamant point had split against the surface of the brick it was he who marched to the orange quonset of General Pomeroy and said, "Sir, let's try an H-bomb."

So they H-bombed it.

There was some confusion during the four days while the crater was being filled in; but after that was done and new quonsets were built the Operation was even more pleasant and roomy, since nine more mountains had been levelled by the bomb, and about twenty others had been fused into interesting colors and shapes. The birds and trees and suchlike had, of course, been obliterated; but they had been beginning to pall on the visitors anyway; and now the area had something of the look of a neo-Surrealist landscape, or a Japanese garden. The radiations had, of course, been absorbed by the usual means.

The brick stayed right where it was, its surface parallel to the horizon, poised, immediately after the blast, over a crater two hundred and ninety-four feet deep.

After the failure of the H-bomb the Generals' pique and frustration began to turn to anger and, in some cases, fear. One pacifistic Lieuten-

ant General did in fact suggest that the brick be left alone and the monorail rerouted; but it was to the credit of the Army that his superiors rallied together and denounced his defeatism for what it was. But the Generals did agree at this conference to call in a theoretical physicist, provided one could be found, in a desperate hope that some light might be thrown on the nature of their adversary.

A call was sent out to headquarters at Big-H (once Harvard University) and a two-day scramble ensued while a theory man—or “egg-head” as such men were cleverly called—was sought. One was eventually found, working in a weather observatory in the Kentucky Reservation, and he was brought—a gray-haired old fellow who freely admitted that he read books and refused to drink synthetic whiskey—to the site of the brick, which he surveyed with some attention.

“Well?” said one of the Generals.

“Very interesting,” said the theoretical physicist, whose name was Albert, and he produced from a trunk he had brought with him a collection of peculiar looking instruments, which he began to set up on the ground. After peering down various tripod-mounted tubes, first at the brick and then at the sun, he then said, “Amazing!”

“Yes,” said one of the generals, “We know that.” There was a ring of generals in brilliant tunics and of security men in black flannel suits around the physicist.

“Amazing,” he said again, “This

seems to be the exact set point of Propkofski’s principle!” He gazed at the brick reverently.

“Whose principle?” said one of the security men, raising his eyebrows and fetching a little black book from his breast pocket.

“Propkofski.” The physicist’s eyes were aglow. The security men were raising eyebrows at one another. “The principle of terrestrial orbital space-time suspension, formulated in 1972, I believe. This is the place, gentlemen, the *exact* point, where Propkofski maintained that the mass-influx lines of the Earth’s field intersected. This is the very hub, provided that Propkofski was right,” and he pointed to the brick. “Yet I believe that Propkofski said something about a mountain hindering his observations.”

“Yes?” said the general, “We removed the mountain.”

“My!” said the old physicist, looking up from the brick for the first time, “How did you do that? With faith?”

“With a converter,” the general said. “But what about that brick? How do we move it?”

“The brick? Oh.” The scientist went to the floating piece of golden metal, still unmarred by the H-bomb, and examined it carefully. When he had finished checking it with a good many instruments, mechanical and electronic, he said, “I wish Newton could see this.”

The security man’s eyebrows went up again, “Newton?”

The old man smiled at him, “Another physicist,” he said, “Dead.”

“Oh,” said the security man. “Sorry.”

"So," said the general, impatiently. "How do we move it?"

The old man looked at him a moment. "I suggest you don't."

"Thank you," said the general, crisply, "Then how would you say it *might* be moved?"

The physicist scratched his head, "Well," he said, "I suppose the Earth might be pushed away from it, since it seems to be a kind of Archimedes' fulcrum. A pressure of about seventeen trillion tons per square centimeter might accomplish that. Of course, moving the Earth might alter the length of the year considerably. And then, again, if Propkofski's principle, which states . . ."

"Thank you," said the general, "That will be all."

After the security men had taken the physicist away for investigation the general who had interviewed him looked at another general and then at the others. He could tell they were all having the same wild surmise. Finally, he said, "Well, why not?"

"Ah . . ." said one of the others.

"The cold war's been going on for fifty years. We may never get a chance to try it out."

"Ah . . . well . . ."

One of the other, younger generals could not contain himself and abruptly spoke up. "Let's use it!" he said, his voice quivering with emotion.

And all the rest of them began to chime in, their eagerness, now that one of their number had committed himself, unrepressed. "Let's use it!" they said. "Let's use the R-bomb!"

**F**IRST A PIT was dug—or converted—a mile and a half deep and three miles in diameter. This was then filled with neo-adamant except for a hole in the center four by ten inches rectangular, directly under the brick. Then the R-bomb and its electronic detonator, the whole thing about the size and color of an avocado, was lowered into the hole, and then the neo-adamant walls were built up six feet above the ground to enclose the brick in what amounted to the barrel of a monstrous cannon. The states of Virginia, West Virginia, Ohio and half of Kentucky were then evacuated, and a final check was made of the figures. It was determined that the kickback from the blast would throw the Earth approximately four hundred and ten miles out of her orbit, and shorten the length of the year to three hundred and sixty-three days, a number which all of the generals found to be eminently satisfactory, in fact, a decided improvement.

The generals decided to use the old physicist's weather station, in the Kentucky Reservation, as their observation point, its elevation and its distance from the brick being quite desirable.

The station was raised on a tripod to a height of one thousand feet, and the Army had the whole structure properly reinforced and shielded. Then the equipment for observation, the T. V. monitoring screens and the electron telescopes, was set up and the generals moved in. The old physicist had by this time taken a loyalty oath and he was allowed to remain in the ob-

servation dome for the event since, after all, he worked there.

At zero hour minus sixty seconds the senior general carefully pressed a small red button and unwittingly echoed the words of a forgotten subordinate. "We'll blast the son of a bitch sky high," he said. Flash-bulbs popped. A counter began ticking off the seconds, loudly, efficiently. All eyes were on the large T. V. screen which showed the huge circle of white neo-adamant four hundred miles away. The T. V. picture was being beamed from a monitoring, pilotless aircraft eighty miles above the location of the brick; they would be able to see the actual blast before the camera was destroyed. The physicist busied himself with his own instruments, making readings of the sun's position. The seconds ticked off.

At the sixtieth tick the counter became silent. There was no sound in the little observation tower. The white circle on the screen was unchanged. Then, suddenly, the screen erupted. In a burst of flame and steam the neo-adamant circle began to crumble. Flames shot up everywhere. Mountains seen at the edge of the screen began to sizzle and ooze out of shape. It was at this moment that the states of Virginia, West Virginia and Ohio were obliterated. Then, abruptly, the picture changed. A specially controlled monitoring camera had picked up a flash of gold. The brick. It appeared to be flying through the air.

"By God," said the senior general. "We did it!"

At this moment the screen went black. There was a roar, a rumble, starting from what seemed to be the very bowels of the Earth, building to a dynamic, deep-buried scream, a screeching of wrenched rock and of the tearing of the Earth's crust; and then a sickening lurch, a nauseous dip and lunge of sideward motion, a sense of acceleration; and then a howling sound, the howling of a sudden, tremendous wind. The generals were all thrown to the floor, trembling.

Somehow the physicist had remained standing, holding the sides of the table on which his instruments were mounted. His old hands were white with the strain and were trembling, but his face was ecstatic. "Amazing!" he said, "Amazing!" His eyes were shining.

"What happened?" one of the generals said weakly, from the floor.

"Propkofski! Propkofski was right!" said the other, his voice jubilant, shaking with emotion. "That *was* the intersection of the mass-influx lines. The brick, the gold brick, was the keystone, the hub! Amazing!"

"But what," said the General, shouting above the roar of the wind that was now like a cyclone, above the screeching of twisted rock and the wrenching of the very bowels of the Earth, "What does that mean?"

"It means that Propkofski must have been right!" said the other, his voice quivering. "The Earth, it seems, is falling into the sun!"

**E N D**

*What does the latest look at Mars tell us? What has been determined about its strange canals, its oxygen, its vegetation, its minerals? Here is a fascinating report by one of the world's foremost astronomers . . .*

# THE FACE OF MARS

**BY DR. ROBERT S. RICHARDSON**

*of Mt. Wilson and Palomar Observatories*

**O**N SEPTEMBER 7, 1956, Mars came within 35,131,000 miles of the earth, the closest approach since 1924, and the closest the planet will come again till 1971. Before last September people were asking me, "Well, Bob, what do you expect to find out about Mars this time?" Now they want to know, "What *did* you find out about Mars?" As I write this at the end of 1956 it is still hard to answer that question. You can get enough plates in a single night working at the telescope to keep you busy measuring in your office for months. But some of the main results can be told now as well as later.

## Planning a Program for Mars

People have the impression that when one of these close approaches occurs, astronomers drop all their other work to concentrate on Mars. On the contrary only a few astronomers who specialize in planetary work are affected. The others go ahead observing variable stars and nebulae the same as usual. At a large observatory there will be perhaps twenty astronomers who want to use the telescopes. This means that you cannot observe Mars whenever you like. A program is made out about a month in advance assigning certain astronomers to the telescopes on certain nights. Let us say you get one of the telescopes for five nights at the beginning of the month and five nights at the end. So on the first of the month you leave your office in the city and go to the observatory on the mountain eager to get some epoch-making observations of Mars. But all five nights turn out to be cloudy so that you never even catch a glimpse of Mars. (By a coincidence the sky clears up beautifully the day you return to town). Your five nights at the end of the month now become doubly precious. But again you may be stopped by clouds or the air may be so disturbed that the image of Mars formed by the telescope is nothing but a blur of light. Mars is only near the earth for about three months. Thus it is easy to see that the planet may pass you by without your getting a single observation of any particular value.

There is so much you would like to do that planning a program be-

comes largely a matter of elimination. The question is, 'What can you do with the instruments available in the limited time at your disposal?' After pondering the possibilities I finally decided to try for the following observations:

1. Large scale spectra of Mars.
2. Direct photographs (snapshots) in light of different colors on high contrast plates.
3. Photographs of the star field around Mars for positions of the two satellites, as well as a possible third satellite.
4. Visual observations.

It would seem that such an exceptionally close approach of Mars would be an ideal time for studying the canals. But the visibility of the canals depends upon other factors besides distance. The season on Mars has to be right. Experienced observers agree that the canals first appear satisfactorily when the date in the southern hemisphere of the planet corresponds to about April 1 in the United States, and by the middle of June little is left of them. In 1956 south Martian April 1 came on our May 23, when the planet was still 82 million miles away. And in September when Mars was closest the Martian date was about June 10. Hence, the summer of 1956 was not such a favorable opportunity for studying the canals as might be supposed.

My first observations of Mars were taken on the morning of June 3 when Mars was distant 75 million miles, so far away that my photographs were taken for test purposes more than anything else. The atmosphere was exceptionally steady

so that the south polar cap stood out with remarkable clarity. Presently I noticed something peculiar in the appearance of the disk. The bright red regions ("deserts") were covered with innumerable irregular blue lines like veins extending through some mineral. Several minutes must have passed before it occurred to me these must be canals! I was taken completely by surprise as I had no thought of seeing canals at 75 million miles. The blue veins bore no resemblance to the fine straight lines as canals are usually depicted on drawings. Their color also was disconcerting. Martian observers, such as Schiaparelli, Lowell and W.H. Pickering, apparently never saw much color in the canals, but described them merely as dark or gray. But these lines appeared to me as distinctly blue, the same color as the large dark regions or maria ("seas," as they were once thought to be).

This was exactly the opportunity I had been hoping for: a shot at Mars when the whole canal pattern was visible. But I hardly expected to have it happen on my very first night. I now got busy trying to get some photographs. A few images that showed the canals clearly might settle the controversy that had been raging ever since they were discovered in 1877.

It would make a nice story to relate that I got some wonderful photographs that finally solved the mystery of the canals. Although some of my plates turned out pretty well the images of the planet about one-tenth of an inch in diameter were too small to show the fine

markings that were easily visible to the eye under high magnification.

The blue lines made such a powerful impression on me that I wrote to some other observers describing what I had seen, and urging them to start work now while the canals were out. They answered, expressing polite interest in my canal observation, but I doubt if any were stirred to activity. They probably thought I was crazy, just as I would have thought, if one of them had written me a similar letter.

I never saw the canals again as I saw them on that morning in June. By the time Mars was close in September a dust storm developed on the planet rendering its atmosphere so hazy it was hard to see some of the large-scale maria. On a night in October at the 100-inch, however, I did see distinctly the far southern canals *Simois* and *Ther-madon*. I suspected others but I was able to hold these with my eye for a second or two.

My most interesting photographs of Mars were probably those taken in orange light on August 10, when Mars was 39,800,000 miles away. The best images show the canals *Gehon*, *Hiddekel*, *Cantabras*, *Agathadaemon*, *Ganges*, *Nectar*, *Nilokeras*, *Draco*, and *Jamuna*. They appear on the negatives as light wispy streaks. From inspection of these photographs and my admittedly casual visual observations made hurriedly between exposures, I am convinced of the existence of streaks on Mars at approximately the positions of well-known canals. They convey to me the impression

of being natural surface markings of some kind.

### The Rift in the Polar Cap

I think one of the most impressive sights Mars showed us in 1956 was the great rift in the south polar cap which became so conspicuous about the middle of July. One of my friends, who is an enthusiastic amateur astronomer, had given me a glowing account of this great gash in the polar cap which he had seen through his 8-inch telescope. Later, when I looked at Mars through the 100-inch telescope in the early evening the polar cap presented its usual smooth unbroken appearance. I decided there must be something wrong someplace and started a long exposure photograph on the spectrum of the planet. But when I next looked at Mars directly about midnight, to my astonishment, there *was* a great gash in the polar cap that justified everything my friend had said about it.

Although this rift in the polar cap was new to us, a little investigation in the library revealed that it has been known for at least a century. It appears regularly in the south Martian spring about a month before the beginning of summer. As the snow melts the rift lengthens until a portion of the cap is completely detached from the main snow field. This detached part breaks up into several white spots, presumably due to snow lingering on elevated ground. These white spots are the famous "Mountains of Mitchel," the only markings on Mars that rate the name of mountains. They were so named

by the English observer, N.E. Green in 1879, in honor of Major General Ormsby MacKnight Mitchel of the U.S. Army, who published the first accurate description of them in 1845. It is possible, however, that they may have been seen as early as 1798 by Schroeter in Germany.

The startling change in the visibility of the rift suggests it may consist of a long cliff running approximately east and west, and facing north. When Mars is turned so that we look along the cliff edgewise, it appears as a line too narrow to be readily visible. But about six hours later after Mars has made a quarter turn the cliff is facing us. It is now a conspicuous object since we are looking at it *broadside*.

### Photographs of the Satellites

Information on the internal structure of Mars is greatly desired in the study of the evolution of the solar system. For example, does Mars have a dense central core like the earth? Or is it nearly uniform in composition throughout like the moon? Now we can get a clue as to the internal structure of Mars if we can determine its oblateness; that is, the amount it is bulged at the equator and flattened at the poles. But such measures are extremely hard to make no matter how you go about it. The colors vary so much over the surface that often images on a photograph have a misshapen appearance like a Japanese lantern. Strangely enough there is a method of determining the shape of Mars which has noth-

ing to do with the color of its surface, and errors arising from other effects. The planet's equatorial bulge disturbs the motion of the satellites. Hence, if we have observations of the positions of the satellites over many years so that the disturbances in their motion can be determined very accurately, we can obtain valuable information on how Mars is constructed deep inside. I hope that measures of the positions of Phobos and Deimos on my plates will have some small share in the solution of this problem.

While photographing the two known satellites there is always a chance of picking up a third. A satellite appears on the short exposure photographs as a tiny dot no different from a star image. But if comparison with another plate shows that some "star" has moved, and if a third plate shows continued motion, then you may have a satellite. You still cannot be sure for your moving object may only be an asteroid that happened to be near Mars. More observations would soon settle the matter, for a satellite of necessity would move essentially the same as Mars, while an asteroid would soon move off in an independent orbit of its own. Unfortunately a rather hurried examination of the plates failed to disclose any suspicious moving objects.

### The Atmosphere of Mars

We know from direct observations of clouds and mist that Mars has an atmosphere of some kind. But does it contain oxygen, the

element necessary for life as we know it? So far most of our knowledge of the atmosphere of Mars is negative in character. The only gas so far identified in the Martian atmosphere is carbon dioxide, the gas that comes bubbling out of soda water. We will have more to say about carbon dioxide presently. So far our best guess about the Martian atmosphere is that it consists mostly of nitrogen and a little argon, inert gases that are non-poisonous but which will not support life.

It would seem that this is a problem that could be settled with an instrument called the spectroscope. Does the spectrum of Mars show absorption lines due to molecules of oxygen ( $O_2$ )?

Here we had better take time out briefly to explain what is meant by such terms as "spectrum" and "absorption lines". Otherwise the reader is likely to be in the same befuddled state of mind as the actors in a motion picture for which I once served as technical advisor. The picture was about the astronomers in a large observatory. To give it the proper scientific flavor the script contained several lines about a "Cassegrain spectrograph", an optical device attached to a certain part of the telescope. None of the actors had the remotest idea what a Cassegrain spectrograph might be. They went through their parts blithely tossing off lines to one another. "Well, Billingsley, how did you fare with the Cassegrain spectrograph last night?" or "Dr. Humphrey, will you check the Cassegrain spectrograph, please?".

Finally one of the actors asked me, "What the devil is a Cassegrain spectrograph anyhow?"

I explained to him how this instrument is built, and how it produces the spectrum of an absorption line:

Everyone must be familiar with Newton's discovery that when light is passed through a triangular shaped piece of glass or prism it is spread out into a rainbow colored band, which is red at one end violet at the other. The spectrum also continues out into the infra-red and the ultra-violet, but light of this wave-length does not excite the sensation of vision in our eyes so we say it is invisible. But these regions can easily be photographed or detected by other means. A rainbow colored band or spectrum can also be produced by what is called a *grating*, consisting of a bright reflecting metal film on which has been ruled thousands of fine grooves. In fact, the grating has practically superseded the prism. The prism (or grating) is the essential part of a spectroscope. Other optical parts are needed to produce a "pure" spectrum. But the final result is a colored band which is a beautiful sight viewed on a piece of ground glass. If the spectroscope is equipped with a camera, and a sensitive plate is inserted at the position of the ground glass, the spectrum can be photographed and your instrument becomes a spectrograph.

If you examine the spectrum of a body such as the sun you will find that it is crossed by many fine dark lines, like pencil lines drawn across

a colored strip of ribbon. These lines mark places where light is lacking in the spectrum. They look dark because there isn't so much light there. Why? Because it has been absorbed. The light from the intensely hot surface of the sun has to pass through the "cooler" solar atmosphere consisting of vapors of metals and hydrogen. The atoms of these elements absorb some of the sunlight. They absorb it in a very particular way, from certain colors only. For example, sodium absorbs light strongly at two places in the yellow part of the spectrum. With a little experience you can recognize the two dark lines of sodium in the yellow at a glance. Iron produces more than 3000 lines through the spectrum, from the ultra-violet to the infra-red.

A word of warning:

All the lines you see in the solar spectrum are not produced in the sun. Some of them are produced in our own atmosphere. Thus oxygen molecules absorb sunlight powerfully in the red and near infra-red regions of the spectrum. Now a planet such as Mars or Venus shines simply by reflected sunlight. Hence, the spectrum of these planets is the same as that of the sun PLUS absorption lines due to any gases that may be in their atmospheres.

### **The Search for Oxygen in Mars' Atmosphere**

Does the spectrum of Mars show lines of oxygen?

It certainly does. You will find a whole series or "band" of lines in the spectrum of Mars due to oxy-

gen molecules. The trouble is these oxygen lines originate—not in the atmosphere of Mars—but in the atmosphere of the earth. Light from the sun strikes Mars, where some of it penetrates the atmosphere and is reflected back into space. Light reflected from Mars in the direction of the earth penetrates our atmosphere down into an astronomer's telescope, where its spectrum is photographed at the end. Now we *know* that the oxygen in our atmosphere produced their characteristic dark lines in the spectrum. The big question is: did the Martian atmosphere also contribute to the absorption in these lines? But how are we going to find out when they are all covered up by the powerful lines of our own atmosphere?

The most sensitive method devised at present depends upon what is known as the Doppler effect, the slight change in position of spectrum lines due to the velocity of the light source toward or away from the observer. When Mars is approaching the earth, any lines originating in its spectrum will be slightly shifted toward the violet relative to the same lines originating in the atmosphere of the earth. If Mars is receding the shift is to the red. The higher the velocity the more the lines are shifted.

Unfortunately Mars never attains a velocity high enough to shift a line in its spectrum entirely clear of our atmospheric oxygen lines where we can get a good look at them. But the shift may be enough to alter the appearance of the line slightly. A search for such small

displacements was made at Mount Wilson in 1933 using an oxygen band in the red. The two astronomers who worked on this project were unable to find the least evidence for any displacements in the oxygen, and concluded that the amount of  $O_2$  in the Martian atmosphere was less than 1 per cent of that in ours. (It is chiefly this piece of research that forces all expeditions to Mars to take along plenty of oxygen and breathing equipment for use after landing).

There are oxygen lines in the *infra-red* region of the spectrum that furnish a more sensitive test for the gas than those in the red. The *infra-red* oxygen lines could not be photographed in 1933 but they are easily accessible now. Preliminary measures on my plates of these *infra-red* oxygen lines are not very encouraging. Our atmosphere absorbs so powerfully that it is doubtful if any possible weak Martian lines can be detected. If there were 5 per cent as much oxygen in the Martian atmosphere as ours it could hardly escape us. But if it is less than 1 per cent the method of velocity displacements is just not good enough.

It would seem to me that we should try some entirely different technique. The rocket might be a hopeful research tool here. Above an altitude of about 65 miles the *molecules* of oxygen which produce the bands in the red and *infra-red*, are broken up into *atoms* of oxygen. These atoms of oxygen do not produce absorption lines in our atmosphere. Now suppose we could get spectra of the moon and Mars

above 65 miles. (We use the airless moon as a control body here). The spectrum of Mars shows the red oxygen bands faintly. The spectrum of the moon does *not*. Then we would have proof of the presence of oxygen in the atmosphere of Mars. I understand that some such project is being considered, starting with a skyhook balloon, and working up, as it were.

### **Carbon Dioxide in the Atmosphere of Mars**

In 1932 a band of unknown origin was discovered in the spectrum of Venus just beyond the region in the red where the eye ceases to be sensitive to light. Laboratory research revealed the band was due to carbon dioxide. This band is an "over-tone" of a much more powerful band of carbon dioxide in the far infra-red. The fact that this near infra-red band shows distinctly in the spectrum of Venus means there *must* be a lot of carbon dioxide gas in that planet's atmosphere. There is not enough carbon dioxide in our atmosphere to show this "Venusian" band at all.

A few years ago the existence of carbon dioxide was discovered on Mars by the identification of some bands of this gas in the far infra-red spectrum of the planet. Its concentration is estimated as 50 times as much as in our atmosphere. Is there enough to show the "Venusian" carbon dioxide band? It seemed like a fairly hopeful possibility. Worth looking for good and hard, at any rate.

Spectra of Mars taken in July failed to show the band. I tried

again in August using higher contrast plates. The technique was improved by exposing on the edge of the planet, where the light from the surface had to pass through a maximum thickness of Martian atmosphere. For this purpose the south polar cap was selected. These plates also failed to show a trace of the band. Two more plates were taken in October on the chance that the amount of carbon dioxide in the atmosphere of Mars might be variable, but without result.

### **The Color of the Dark Markings**

The dark markings or maria are of great interest since it is possible that they consist of vegetation. If so the maria are the only evidence we have for life beyond the earth. Their color is usually described as blue-green or gray-green in textbooks. Most observations of Mars have been made with a lens or refracting type of telescope, with the lens corrected so that the yellow-green light to which the eye is most sensitive is brought to a focus. In a mirror or reflecting type of telescope *all* colors are brought to a common focus. A reflector would therefore seem to be the more trustworthy when it comes to detecting differences in tint. In my observations of Mars made with the 60-inch and 100-inch reflectors on Mount Wilson, from June 3 to September 11 the maria always appeared to me as *slate blue*. This color was confirmed by others who happened to be present. But when I viewed Mars the next time on October 11 the blue tint was gone.

The maria looked light green or gray-green. Last night (December 14) I was fortunate in getting another look at Mars through the 100-inch under fairly good observing conditions. The maria had a kind of dirty gray-green appearance with no distinct color at all. The season in the southern hemisphere of Mars now corresponds to about August 10 in the United States. The change in color is probably a seasonal effect.

### Summary

What do all these observations mean? What do we know about Mars that we didn't know before?

I feel that the most important observation I was able to make was the one on the Venusian carbon dioxide band. The fact that this band does not appear in the spectrum of Mars can be used to set a limit to the concentration of carbon dioxide in the planet's atmosphere. It is hard to fix this limit at present. This is a job for the laboratory. It may sound presumptuous to talk about something you didn't find as being important. But it gives us a definite bit of information that I think is worth knowing.

From my preliminary measures on the red oxygen bands I feel that the method of velocity shifts suggested by Lowell some fifty years ago is not going to tell us much about oxygen in the Martian atmosphere. The amount present is too slight to be observable by this technique. Rocket spectra of the moon and Mars above 65 miles seem more hopeful.

The distinctly blue tint of the

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maria in the Martian spring is of interest in connection with the possibility of plant life on Mars. It has been generally assumed that the maria consist of growing vegetation. (A rival hypothesis is that they are dark due to green minerals deposited by the wind from volcanic action). Against the vegetation hypothesis is the fact that the maria do not reflect light as our green plants do. The chlorophyll in green plants reflect near infra-red light powerfully. That is the reason why vegetation photographed in the infra-red comes out badly over-exposed so that it looks white when printed. But the maria reflect light about the same in all colors, like the dry mosses and lichens. From a recent investigation of vegetation growing under Mars-like conditions near the Arctic circle, Russian scientists have found them to be abnormally blue in color. Thus the whole question of plant life on Mars is still wide open, with much more experimental work to be done before we can make a positive statement one way of the other.

Finally, whether anybody else believes it or not, I am convinced of the existence of streaks on Mars at approximately the positions of well-known canals. These streaks look as if they were narrow extensions of the maria into the desert regions. They impress me as being some natural surface feature. What they are I wouldn't even dare to guess, as of now, but Mars will come near enough to be studied again and again, and our instruments and techniques will grow more refined. Someday we will know. **END**



*Illustrated by Ed Emsh*

**jingle in**

*When even the Fight Commission is in on the plot,  
and everyone knows that the "fix" is on, when no one will  
help him, what can a man do—except help himself?*

CHARLIE JINGLE walked into the long room with the long table and long Commissioners' faces in it. He went to a chair at the head of the table, and sat down, a small man in loose, seedy clothing looking rather lost in a high-backed chair with a regal crest carved in the wood.

"You," asked one of the Commissioners, "are Charles Jingle?"

Charlie nodded his head, a small nod from a small man sitting in a big man's chair.

"You are aware of course . . ." began the Commissioner, but Charlie Jingle waved his fingers and cut him off.

"Sure, sure, let's can the bunko and get down to cases."

"You have been summoned here . . ." began the same Commissioner, and Charlie Jingle waved his fingers again.

"But I ain't gonna anyway," said Charlie Jingle. The Commissioners stirred, cleared their throats, slid their bottoms with unease on their chairs.

"You understand," said the Commissioner, "that your license may be revoked if you insist on being uncooperative?"

"Sure," said Charlie Jingle. "I understand."

A bulky man, who had been standing at a window with his back to the seated members of the Commission while they talked with Charlie, turned to face them. A man with a heavy, grey face that had no humor in it. Charlie Jingle watched him slowly cross to the table and recognized him as Commissioner Jergen, head of the Fight Commission.

"Jingle," said the man in a dry voice, "I'm going to make an ex-

# the jungle

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ample of you if you don't come across. I'm going to smear your name from coast to coast. I'm going to blackball you so hard you won't get a job anyplace, at anything! Get the message?"

Charlie Jingle got up from his chair and walked to the door. "This the way out?" he asked.

"Hold on!" roared Commissioner Jergen, and Charlie Jingle stopped with his hand on the knob, looking back with polite inquisitiveness at him.

"You goddam people think you can pull quick deals on the Public and on the Fight Commission. I'm here to prove you can't!"

Charlie Jingle laughed.

"You're here to make a big noise, and scare all the scrawny citizens into a confession, Jergen. Don't kid me!"

"I suppose you've got too many contacts to be frightened?"

"Contacts? No, I don't have a single damn contact. All I got is my two hands, and you already told me I ain't gonna be able to make a livin' with them, so why should I stick around here anymore?"

Commissioner Jergen pulled a chair forward.

"Siddown, Charlie. Let's talk like reasonable men," he said. Charlie Jingle searched his face for a lie or a trick. Finding none, he went back to the table and sat down.

The Commissioner waited a moment, and then said earnestly:

"Listen, Jingle. Seventy years ago this country outlawed prize-fighting. It was barbarous, they said. Men shouldn't fight men. Men shouldn't capitalize on other men

as if they were animals. Okay. They changed it. Now we got the Pug-Factories. But we also have the same thing that went on before. We have the grifters and the shy-sters and the fixers operating at full tilt all over the place. There's a few honest guys in the game. I hear you're one of them. All we want is to nail the crooks! We want to bust the Fix Syndicate wide open, get me? Now, if you love the game the way I hear you do—not for the money, but for the smell and the excitement—why won't you help us bust them wide?"

Charlie Jingle shook his head.

"You got it wrong, Jergen. I know about the fixers. But I never consorted with them. If I did, I could've retired a rich man a long time ago."

"Then how about that Saturday night fiasco at the Golum Auditorium? You call that a straight fight?"

Charlie Jingle shrugged his shoulders.

"All I know is I sent my boy in there. He's a Tank, okay. He's up against the newest fighting machine invented. Okay. He drops him. I'm as much surprised as you. All the odds read against me. I got a rebuilt Tank in the ring. But he flattens one of the flashiest pugs in the business. Sure, I admit, it looks suspicious. Fifteen minutes after the upset, one of the biggest fixers in the game walks into my boy's dressing-room . . . But don't forget, I'm the best trainer in the business. I take a chunk of worn out fighting machine and make it over into something that buys me bread and

coffee. So maybe I create a freak. How do I know? Maybe I twisted a wire wrong, and my Tank's the toughest thing punching."

"You're trying to tell me that fight was on the level, is that it?"

"So far as I'm concerned, it's level. So far as you're concerned . . ." Charlie Jingle shrugged.

"How is it you happened to have your boy handy when the other fighter couldn't go on?" asked the Commissioner.

"I got my stable a block away from the arena. When I heard about Kid Congo getting smashed up in a auto accident, I called the arena. Before the fight, I had twelve cents in my pocket, a dime of which I used to call the arena. They told me 'Sure, bring him down quick, Charlie'. So there I was . . ."

"So they put your Tank in against the Contender. Just like that?"

Jingle snapped his fingers.

"Like that."

"And Harry Belok had nothing to do with the upset?"

"Ask Harry Belok."

"Why did he come to see you when the fight was over?"

Charlie Jingle laughed.

"He come to pay me off . . ."

The Commissioner looked at a sheet of paper on the table in front of him.

"Nineteen thousand seven hundred and thirty two dollars worth of pay-off?"

Charlie Jingle nodded.

"And thirteen cents. You got the thirteen cents down?"

"I've got the thirteen cents down. But how come he pays off so much money to somebody's completely broke, Charlie-boy?"

"Easy," said Charlie Jingle. "The Tank's end of the purse is four hundred bucks, win or lose. Before the fight, I bet the Tank's end against Harry, at house odds. You figure it up, and see if it don't figure out to the penny."

Charlie watched one of the Commissioners scribble quick numbers on a piece of blank paper. In a moment the man looked up, and handed the sheet across to Commissioner Jergen. Jergen looked at it quickly and grunted.

"Okay?" asked Charlie Jingle.

"Okay," growled Jergen.

"When we fight the Champ, I'll send a couple tickets around free. See ya' . . ." Charlie Jingle went out.

**C**HARLIE JINGLE came out of the underground tubes and walked down a block of chipped brick and colored plastic buildings, past picket fences and an empty street. He looked at the street, the pavement—dark, quiet, uncluttered by garbage, devoid of kids. On the roofs of the buildings was a jungle of neatly bent, squarely twisted, staunchly mounted aerials. The kids were under them, behind the picket fences, watching five-foot-square screens that flashed stories and news and the life histories of ring heroes like himself. A nice, clean-cut, handsome actor would act the part of Charlie Jingle, his fights, loves

and disappointments, all ending up in one glorious, stirring message. Charlie Jingle made it. From rags to riches in a single swipe . . . So can *you*.

He stopped in front of Hannigan's Gym, looked up and down the street, and cautiously spat into the gutter. Then he went past the swinging doors into the building's interior.

Inside the door, he breathed deep the stale smell of oil and leather that permeated the atmosphere. Opening his eyes, he looked into the flat, grinning face of Emil McPhay. McPhay had been chalking schedules on a blackboard when he spotted the rapt expression of Charlie Jingle's face.

"As I live and panhandle!" exclaimed McPhay, his eyes rolling in their fat sockets.

"Anybody to see me, Emil?"

"Well you know as well as me somebody is, Charlie. The lovin' picture-makin' people 're here. Got a whole staff wit 'em." He leaned close, rolling his eyes shyly. "You gonna give 'em the story of yer bloody life, Charlie?"

Charlie strode toward his shop at the back of the gym.

"Not unless they make me lead man. And *you* the leading lady!"

He went past a row of smoked-glass doors to the last one with C. JINGLE, TRAINER printed on it, opened it, and went in. As Emil McPhay had said, the room was mobbed with smoking, suntanned Californians. An elegant-looking man rushed forward and jerked his hand up and down.

"Glad . . . so glad . . . Pictures

. . . Hope . . . Contract . . . Of course. Your boy . . . Mister Jingle . . . Famous . . ."

Nobody had called Charlie Jingle mister for ten years. In one night, he'd graduated from flop to mister. He rubbed his fingers together, feeling the sweat on them. His eyes took in the walls painted their flat, drying green, the racks of tools on them, the pictures of great fighting machines all over them, the electrical diagrams, the Reflex-Analyses Patterns mapped out next to each one. Then he lowered his eyes to take in the grinning, smooth-faced men around him, doing nervous things with their faces and hands. He looked at the man in front of him, his mouth flapping open and closed, contorting this way and that, and suddenly Charlie shut his eyes tight, drew in a blast of air, screwed his mouth open, and yelled "Shaddap!" good and loud.

There was stunned silence. Charlie looked around at them, at their poised, waiting faces.

"Scram!" he yelled, and jerked his finger to the door.

Slowly, the suntanned Californians drifted out of the room, watching him closely lest he maul them or loose another violation of the success story at them. One man broke the spell.

"Of course, Mister Jingle, one's life history is certainly something to be treasured. Not to be treated lightly. But I assure you we—my company, that is—we will make certain that we adhere to the facts, in our fashion. There will be no unnec—"

Charlie Jingle grabbed the man's jacket-front with his left hand, his trouser-seat with the other, and, taking advantage of the man's total unpreparedness, threw him bodily out of the room, in the same motion kicking the door shut so hard, the glass cracked and a piece jumped out of the upper left hand corner.

Then Charlie Jingle stormed into his shop, where Tanker Bell awaited him.

When Tanker saw Charlie come into the room fuming mad, he shut off the reflex-machine and turned to watch him. Charlie Jingle paced back and forth in the room, in the small space between work-bench and wall. Suddenly he stopped, spun savagely to face Tanker. "Well? What the hell you lookin' at?"

Tanker Bell grinned. "You, Charlie. I like to watch you when you're mad."

"You do, eh?"

Tanker watched the rage build up to a good healthy flush on Charlie's skin.

"Jeez," Tanker jibed, "you look as red as those beets they sell over in the Old-Methods Market."

"Listen you! Just because you dropped that flashy character last night. Don't let it go to your head! You get me sore, by God, I'll have you piled up in the yard along with yesterday's rusty pugs!"

Tanker laughed.

Charlie Jingle glared at the Tanker a moment, drew a deep breath, snorted it out, and paced

twice. Then he faced the Tanker again.

"Sorry, kid. They got me goin today. First the fight commission. Then these soap-peddlers from Hollywood. Sorry I blew off."

"How'd it go with the Commission?"

"Okay, okay. Jergen knows about me. He's just hungry for a bust, you know? Wants to nail the Fixers."

The Tanker took a step toward Charlie.

"The Champ call?" he asked, voice trembling. Charlie shook his head in the negative.

"Why don't you sucker him, Charlie? Force his hand!"

"You want a bout with the Champ?"

"Sure! Don't you?"

Charlie sat down on the work-bench and pulled the Tanker down next to him.

"Listen, Tank. Last night was a freak, you understand? Something happened last night, I don't know what. But you ain't the boy to fight the Champ—My God, boy, you're older than me!"

Tanker Bell looked at Charlie, his face puckering like a child's.

"No, now wait. Lemme make it clear, Tank," said Charlie Jingle softly. "You'n me been together fourteen years. We've fought in some pretty ancient Tank-towns. We've fought young and old alike, and you know as well as me that it was always an even toss whether or not you would get knocked cold. We're mediocrities, Kid. When I bought you, you'd already seen your best days. Am I right?"

Tanker Bell nodded, his head down on his chest.

"Look, Tanker, I ain't tryin to hurt you. I just don't wanna see you get killed!"

"Well who said anything about gettin' killed, for God's sake!" bawled the Tanker.

"Look at it this way. You've been knocked to pieces a dozen times, and I've gone to work and put you back together a dozen times. I've twisted your wires, re-shaped your reflex plan, doubled your flexibility and your punch-power, co-ordinated and re-co-ordinated you and re-analyzed your nervous-pattern until I've exhausted every possible combination. You're a fighting machine, and a good one, kid. But machines grow old. They get outdated, like me. I'm a Mechanical Engineer. Okay! There's lots of new stuff I don't know that these college kids know. What happens to them? They go to work for Pugilists Inc., inventing new machines with new systems. They got systems that I never dreamed of. Do you know that?"

"Well what's that got to do with me fightin' the Champ, for God's sake?"

"Everything! They put machines in the ring now that are worth Five Hundred Thousand dollars! They're almost indestructible!"

"How come that punk I fought last night wasn't so indestructible, then? How come about that, Charlie?"

"I dunno, I dunno. Somethin' musta gone wrong. Maybe he shorted out."

"Or *maybe* for once you hit the

*right* combination, how about that, Charlie? Maybe I'm real ripe, now, after all these years of tankin' around!"

"But Tanker! Use your head! The Champ's brand new, spankin' young. He's the newest-styled fighting machine in existence. What chance you think we stand against that?"

"Listen. I fought that bum last night with ease, you know that? There I was, just glidin' around him, punchin him at will—"

"Maybe it was an accident! Maybe somethin' went wrong with his system last night . . ."

"And maybe I dropped him on the square, too . . ."

"OKAY!" shouted Charlie Jingle in desperation. "Maybe you did. And maybe, if you go in against the Champ, maybe he'll kill you! Maybe he'll smash you so hard I won't be able to put you together again. You wanna take that chance? Or you wanna settle down nice and quiet in some Pug factory, supervisin young fighters?"

"Naw!" yelled the Tanker. "I wanna take that chance! I want you to get me a fight with the Champ!"

"Are you dumb, or what? Don't you know they never come back?"

"All I know is this," began the Tanker. "Fourteen years we bin together. Fourteen years you stuck it out and starved it out, workin with scraps from a junk-heap, with stumble-bums like me who've seen their day. There was times when you went hungry because the junk-heap needed oil, or wiring, or a pattern-analysis, or parts. Now you

got something! Now you can be on top! You know damn well you don't want any part of that Hollywood fiasco. You got a crack at big money. You gonna let it go by-the-by because you're afraid a pile of wires might get killed? Naw! We fight, and that's the way it stacks!"

"You mean it, don't you, Tanker?"

The Tanker said nothing.

Charlie Jingle slowly rose, tired in his bones, tired in his joints. "Okay. I'll arrange it. But don't blame me if—"

"I won't." said Tanker Bell tightly, and Charlie went out. In the hall, the Hollywood people were still waiting for him. Charlie shouldered past them with a half-spring to his step.

**H**E SAT IN the waiting-room of the offices of Pugilists, Inc., on a plush powder-blue lounge chair chewing gum languidly. From time to time he shot a glance at the secretary sitting inside a totally enclosed desk, operating a Mento-Writer Machine, the electrical contact-buttons fixed to her temples. He watched in sleepy fascination as, every so often, she leaned over and pushed the button marked *corrector*, and there would follow an electrical hiss as the tape on the machine slid back, eliminating wrongly-formed thoughts.

Charlie knew that somewhere in the room there was machinery observing him, measuring his pulse, emotional balance, probable intelligence, habits, and massing and

digesting the general information so that Pugilists, Inc., would know what kind of man they were dealing with, and what approach would be best.

Somewhere in this building another machine was probably purring, feeding information from memory-banks, relating all known facts and incidents regarding Charlie Jingle, his birth, environment, social and political connections, moral status, business ethics, and bank account . . . Not that Charlie Jingle was so important to them, this he knew. But Pugilists, Inc., kept records and histories of every and any individual having even the remotest connection with the fight game.

As Charlie Jingle sat there a smile twitched across his face. Let them figure *that* out, he thought, and then sank into a reverie. Over in the other part of the room, across the prairie of rug, the secretary Mento wrote efficiently, the machine going ZZZ CLK SSHH-HH CLK CLK ZZZZ, hypnotic in it's well-oiled quietness.

"Jingle?"

Charlie Jingle looked across the room to the secretary. "What?" he asked.

"Would you go in please, Mister Jingle?"

Charlie followed the direction of the girl's gesture to a panel in the wall. He got up and started to cross suspiciously toward it. As he slowed down, nearing it, he looked back at her, and she smiled and encouraged him on sympathetically toward the doorless wall. Just as Charlie thought *It'd be funny if*

*I break my nose on that goddam wall . . . the panel swung in quietly.*

Charlie walked through it into a room. In it there was another veldt of rug, at the far end of which was a bar, a lounge chair, a tremendous sofa, and a low, knee-high table. The walls were decorated with modern paintings in a colorful, tasteful, executive way. Standing near the knee-high table were three men, one distinguished looking, the other two looking as if they'd stepped out of a Young Collegiate Magazine ad.

The elegant one crossed to Charlie, his face a big, pleasant, well-groomed smile, hand extended.

"Allow me, Mister Jingle. I'm Kort Gassel. These two gentlemen are Jerome Rupp and Eugene White. Would you like a drink, Mister Jingle?"

Charlie Jingle shook their hands and sat down, crossing his legs comfortably.

"You got gin, Mister ahhh—"

"Gassel," said Kort Gassel, and crossed the three feet to the bar. "Soda?" he asked.

"Straight," said Charlie Jingle, and watched the other two sit down slowly as Gassel came back with his drink.

"That's quite a drink. I know few men who enjoy straight gin, Mister Jingle. It always comes as a surprise when I—"

"You gonna give us the fight, Mister Gassel?" interrupted Charlie.

"The fight? You mean with Iron-Man Pugg?"

"That's right, with Iron-Man Pugg."

"Well Mister Jingle. Since you put the matter so straightforwardly. Pugilists Incorporated only owns a small block of stock in Iron-Man Pugg, as you know. Mister Rupp and Mister White here represent the other interests involved. As you must know, Pugilists Incorporated is a large-scale business, designed to function on a large-scale basis. Now, we, the stockholders in Iron-Man Pugg, have thought this thing out. We've come to the conclusion that it would rather—well, embarrass the Company to agree to such a match as you propose."

"So you won't fight?"

"No, no, Mister Jingle, don't jump to hasty conclusions. I'm trying to explain something to you. It's not simply a matter of matching your—ah—boy against ours. But we *are* concerned with the overall effect of such a bout. Frankly, our reputation as a manufacturing concern is more important to us than the outcome of any single bout—"

"Whadda you say you get to the point?"

"Certainly. Tanker Bell, as we understand it, has a fighting history of forty-seven years. Now, I'm afraid we'd be made a laughing-stock if Tanker Bell were set into motion against one of our products."

"Especially if he won, is that it?"

"Particularly then. But we rest secure in the fact that that outcome is highly improbable, not to state impossible."

Charlie Jingle sipped his gin,

looking from one face to the other.

"So?" he asked, anticipating what was about to come.

"Suppose, Mister Jingle, you were offered a price for Tanker Bell, price far in excess of his actual worth. A price big enough to even make it possible for you to perhaps buy a second-rate fighter in good second-class condition."

Charlie Jingle closed his eyes and tapped his foot with horny, grease-monkey fingers. In a moment he opened them and slowly took in the three representatives of the champ, Iron-Man Pugg.

"Lemme get this straight. You want me to sell Tanker for much more than he's worth because you'd be humiliated at having to put one of your products in the same ring with him?"

"Exactly," said Kort Gassel.

"But you're sure your boy'd whip him in the ring?"

"Well obviously we all know the knockout victory he scored over the Contender was an accident."

Charlie Jingle nodded.

"We all know it. But there's one guy in the world who don't. You know who? Tanker Bell himself."

Kort Gassel laughed.

"A robot, Mister Jingle? Surely you must be—"

Charlie Jingle shook his head.

"Can't do it, boys. I gotta consider the Tanker. You see, Mister Gassel, Tanker thinks he could take your boy. And not only does he wanna take him, but he won't take no for an answer!"

"Listen, Jingle, is this some kind of joke? What are you holding out

for? A price? When I said I'd make it worth your—"

Charlie Jingle shook his head, stubbornly and firmly.

"No price, Gassel. Just an agreement-contract."

"Listen, you fool, don't you realize what's at stake here? We're big business! We can't afford to play around with lucky independents like you!"

"Can't take any chances, huh?"

"Exactly that! Can't, and won't!"

"Wanna bet?"

"If you try to—"

Charlie Jingle got up from his seat.

"Gassel . . . I've been in this racket so long I've got oil in my veins instead of blood, and a Reflex-Pattern Analysis for a brain. I know every angle there is to know. If I want a fight, I'll get one. So don't go try putting your big business pressure on me. I'm too old for college-boy antics."

Kort Gassel stared at him for a long, hostile moment. Then his face broke into a smile.

"My friend, do you know what you're bucking? These are the offices of Pugilists Incorporated you're in. Don't you realize what that means?"

"Sure," said Charlie Jingle. "It means that if Tanker Bell whips Iron-Man Pugg, Charlie Jingle will one day have as big a factory and as many orders for Fighting-Machines as Pug, Inc. . . ."

Charlie Jingle crossed the desert of rug toward the exit-panel.

"See you at Ring-side, Kids." And he went out.

**MISCHA HANNIGAN**, owner and proprietor of Hannigan's Jungle, watched from his tiered office as Hammerhead Johnny put Tanker Bell through his paces in the ring. His eyes travelled from the laboring fighters in the ring to the crowd of spectators standing and sitting around, watching the Tank work. He was smooth and fast, without a kink, stabbing light quick jabs and those murderous body-rights that had stopped the Contender, breaking, the press had said after the fight, the metal rib-cage inside the Contender's body. Mischa Hannigan was happy.

After fifteen years of obscurity, his gym was fast-becoming popular again. He had begun to charge admissions again to fans and promoters who were eager to see the Tank at work. Once again during the afternoon workouts there was the hum and roar of spectators, the slap-slur of springing feet on the canvas followed by the booming of fists echoing from rib-cage and jaw-bone structure. There was the smell of money in his gym now, along with the smells of leather and oil.

The door behind him opened and Hannigan turned to Charlie Jingle.

"'Lo, Charlie."

"'Lo, Mish . . . How's he look?"

"Terrific! If I didn't know him for twenty years, I'd swear he was brand, spankin new!"

Charlie Jingle grunted quietly and walked to the plate-glass window. He looked down at them there in the white-roped square, watched the Tanker attack with a quick-reflex attack, block a flurry of counter-blows, weave under a right-

hand smash to the head, and rock Hammerhead Johnny to the ropes with a combination of shoulder-straight jabs to the stomach and a cross-hand right to the chest. A hum of approval and amazement went up from the spectators.

"Charlie!" shrieked Mischa Hannigan. "Charlie, did you see that? And that Hammerhead Johnny is supposed to be the most stable Pug in the business. They say he's got magnets in his feet, can't nobody break the contact of—"

"Calm down, calm down, it's only practice."

"Practice he calls it! If Hammerhead could bust up the Tank, don't you think he would?"

"Hammerhead's an old junkpot, Mich, and you know it!"

"Old he may be, Charlie, but junkpot he's not. Crafty as a damn president of Pugs, Inc., he is, and everybody in the business knows it. He ranks with the best sparrin' partners in the world, he does."

In the ring below something happened that drew a roar of uncontrollable excitement from the crowd. It was over in a flesh and nobody saw quite how it happened. Hammerhead Johnny's body described a rigid, dark arc in the air, hovered suspended a second in a completely horizontal position, and then crashed with a hollow boom to the deck. The Hammerhead did not move.

"BEGREE!" howled the delighted Mischa Hannigan. "BEGREE, he's knocked him cold!" He began to dance around the room in a jig that shook his frame

with every jolt and pirouette. Charlie Jingle laughed.

"I'll be damned! The Tank's really got it! He really has got it!"

"Oh, we're rich, we're rich, we're rich!" chanted the hysterical Hannigan, dancing his macabre dance of the human puff-ball. There was a knock at the door and Hannigan, still chanting, danced to the door and opened it. The relaxed puffy flesh drew tight, his back stiffened. Charlie Jingle peered around his girth to see who stood there.

Harry Belok, in a black Hom-burg and a blue pin-stripe suit, stepped smiling into the room, twirling an ebony cane. He doffed his hat, bowing slightly. Behind him a small man slid in next to the wall, his whole body screwed up tightly into his neck. Hannigan, with a pale, sickly smile, shut the door.

"If it ain't Harry Belok! Hello, Harry."

Harry Belok, smiling, looked straight at Charlie Jingle. "Whadayasay, Hannigan! How's things, Charlie? Long time no see, hah?"

Charlie Jingle, with a tightness in his throat, mirrored the sick expression of Mischa Hannigan. He smiled a smile so forced his flesh stretched like a rubber mask out of control.

"Hello, Harry. What can I do for you?"

"S this way, Charlie-mo. I just seen your boy work out. I just seen him club the Hammer-head to the deck with the weirdest combination I ever seen. It's some-thin' new, he's got. Somethin' original! Know what I mean?" Harry

Belok stopped pacing, stopped twirling, to look at Charlie Jingle. Charlie Jingle waited.

"Well—I hear around the grapevine that Pugs, Inc., don't relish the thought of givin your boy a crack at Iron-Man. Is that true, Charlie-mo?"

Charlie Jingle shrugged.

"It don't mean a thing, Harry. You know that as well as anybody."

"Yeah, Charlie-mo. But you know as well as anybody that the Fight Commission has got a rules book as thick as this room. If Pugs, Inc., really wants to, they'll find some kinda statute that dis-qualifies your boy for the championship. Now, you don't want *that* to happen, do you?"

Charlie Jingle began to feel the heat flushing up behind his eyeballs. "What's the pitch, Harry?"

"I think maybe what you ought to do, Charlie-mo, is lemme buy a chunk out of your boy. Then I guarantee you get the match."

"What makes you think I don't get the match anyway, Harry?"

Harry Belok turned, pointing his stick through the glass to the gym.

"Look down there. You see any reporters there? You see any cameras shootin'?"

Charlie Jingle did not move, keeping his eyes unblinking on Belok.

"Okay. There's no reporters. No press build-up. Pugs, Inc., has put the freeze on. So? What's the point?"

"The point," said Harry Belok, tapping Charlie Jingle's chest with

the white-tipped stick, "the point, is that you don't get no match from Iron-Man unless you play ball with me!"

Charlie Jingle squinted at him through a cloud of brown-blue smoke. "Can't do it, Harry-mo." he said quietly.

"You serious?"

"Dead serious," said Charlie Jingle.

"You get too serious, that's the way you liable to wind up." said Harry Belok through his teeth. He turned and stomped toward the door and went out. The little man against the wall slid out after him.

Charlie Jingle walked nonchalantly to the door, hooked his foot behind it, and kicked it shut with a loud slam. Mischa Hannigan took a handkerchief from his pocket, wiping his brow.

"You've gone crazy, Charlie. You've gone stark ravin' mad!"

Charlie Jingle whirled.

"All these years, Mish, I starved and sweated in tank-joints. All these years I broke my back, and nobody lifted a finger except a choice one or two. Now I've got a crack at somethin' good and everybody wants in. Well I don't want them in! I want them to stay clear, and lemme go my own way! Is that crazy?"

"But Charlie," moaned Mischa Hannigan. "You can't go laughin' at the Fixer like that! Don't you have enough worries without gettin' killed?"

Charlie Jingle looked at him a blank moment and then laughed. He turned, looking toward the ring below. The Tanker was on the

Gym floor, looking up. He waved. Charlie turned to Hannigan.

"Can you get me the Jawbreaker to spar with Tanker, Mish?"

Hannigan sank slowly into his leather chair behind the beat-up, rusting metal desk. He rubbed a patch of rust with his thumb.

"Sure. Sure I can get the Jawbreaker. Can you get the match?"

"You just watch my dust." said Charlie, and went out.

Mischa Hannigan crinkled his nose. He began to feel his asthma coming on.

**"ARE YOU CRAZY, Jingle?"** A roared the apoplectic Commissioner Jergen. "I can't get myself wrapped up in ring politics! I'm a fight commissioner, not a goddam promoter!"

Charlie took a few steps toward the Commissioner, leveling a finger at him in indictment.

"Now you lemme tell you somethin'. You run the fight game, but the only thing you're interested in is your own goddam reputation. The only time you ever get up off your fat keister is when somebody publicly pulls a quick deal that looks phony. Then you roar up from the saddle and start screaming 'foul'—*only* because it makes you look bad if you don't!"

"I can have you cited for contempt—"

"I don't give one damn in hell what you can have me cited for! I thought you were one square guy. But all you are is a bloody politician like all the others! You're here to make sure the fight racket

gets a fair-deal. Well I'm getting the old freeze-away, and you still sit on your keister and don't do a damned thing!"

"You damn midget!" croaked the Commissioner, and Charlie Jingle whirled, fists cocked, his face working up a nice purple color. "What'd you call me, Fatso?"

"I called you a damn midget, and if you don't like it, I dare you take a poke at me!" said the Commissioner, and coming around his desk he thrust his jaw out toward Charlie Jingle's cocked fists.

Jingle drew his fist back and stopped. Slowly he dropped the cocked hand by his side.

"Oh, no! Oh, no you don't! You'd just love me to do it, wouldn't you? A half-hour later I'd lose my license for conduct unbecoming a fight trainer."

The Commissioner straightened up slowly, glaring out from under thick grey eyebrows at Charlie Jingle's face.

"You think I'd pull *that*?"

"Goddam right you'd pull it! For all I know, you may even be working for Pugs, Inc."

Fight Commissioner Jergen rocked back on his heels as if he had just taken a blow between the eyes. He sank slowly into his chair, staring in stillborn amazement at Charlie Jingle.

"Wait a minute, Charlie. You mean to say—Listen, boy, what's happening to you? You know better than to say something like that to me!"

Charlie Jingle suddenly felt a hollowness in his stomach.

"I'm sorry, Jergen. I don't know

what's the matter with me. This thing's got me sore. They got me goin', and there's nothin I can do about it. I called the press. I told them that Pugs, Inc. and Tanker Bell had come to an agreement. I even quoted a fight date. I look in the papers the next day. Nothing! They got me sewed up tight. I come here as a last resort . . . I'm sorry I shot off my mouth!"

Charlie Jingle turned and started out.

"Now wait a minute, Charlie . . ." Charlie Jingle turned. "You see, I know all about these kinds of deals in the game. Have known about them for years. But they keep me shut out because I can't prove anything. If you go to court as a witness, Pugs, Inc. will have fifteen other witnesses. They'll even have a taped recording of your conversation with them, which they juggle and splice to fit their purposes. You'll hear things coming off a tape which you damn well know you didn't say or mean. But you'll have to admit it's your voice; you were there, the other guys in the room were there—and they got you nailed. See what I mean? They're big business. They got it sewed."

"You mean there's nothing to do?"

"I mean there are ways. All you've got to do is sneak yourself into the public eye. Once that happens, the public asks questions. What happened to Tanker Bell? Why isn't he fighting the Champ? Know what I mean?"

"Don't you think they're askin' questions now?"

"Sure. But they ain't doin' it en masse. See?"

"Yeah," said Charlie Jingle softly. "Yeah. What I gotta do is hit Pugs, Inc. where they ain't got control of the situation. Where they don't have their stooges workin' to keep things quiet."

"Now you've got it," said the Commissioner, grinning.

"Okay. See you around," said Charlie, and started out.

"Take care," warned the Commissioner. But by that time Charlie Jingle was on his way.

At one o'clock of that afternoon, Charlie Jingle boarded a coast-to-coast rocket. Fifty five minutes later, at ten fifty-five A.M. West Coast Time, Charlie Jingle set foot on the pavement of Los Angeles' Municipal Rocket-Port, hopped a cab, and got out on the lot of Galaxy Films. His business there took him two hours and twelve minutes, by which time he hopped another cab, was born back to the Rocket-Port, and bought a return ticket on the eastbound Rocket, scheduled for takeoff at five P.M.

Charlie found a few hours on his hands. He chose to divert himself at the Jet-Car Races in Culver City. He dropped forty dollars on the first two races, and had just bought another ticket when, as he walked away from the betting window, he saw a familiar profile marking possibilities on a racing sheet with a well-chewed pencil. He nudged up to Rabbit Markey, and in a half-whisper, asked:

"Got anything hot today, Jack?"

Rabbit Markey looked up with

an annoyed frown, blinked, and when Charlie Jingle's face registered, laughed.

"Lo, Charlie? How's things out on the Coast?"

"Things," said Charlie, shaking his hand, "are lousy. But they'll get better real fast. How about you, Rabbit? Out of the fights for good?"

Rabbit Markey sighed slow and long, nodding his head.

"I dumped my whole stable, Charlie, and when I come out here, I figured Jet-Car racing was a clean way to make a buck. So I bought me a Jet outfit. But it's the same tie-up as the fights was."

"I can imagine," said Charlie Jingle.

"No you can't, neither. For instance, you know who Jet-Cars Incorporated happens to be an affiliate of?"

"Wait! Don't tell me. Lemme guess." Charlie shut his eyes. "Pugs, Inc.?"

"Bingo," said Rabbit Markey dispiritedly. "You know who makes the drivers for the Jet-Cars?"

"Wait! Don't tell me! . . . Pugs, Inc.?"

"Bingo," said Rabbit Markey sadly, and Charlie laughed.

"That's the way the bugle blows, eh, Rabbit?"

"You know who's got the Commissioner of Jet-Car Races bought out?" went on Rabbit Markey.

"Wait! Don't tell—How do you know that, Rabbit?"

"Whatsa difference. I know. For sure! I happened to find out. Just like the old Fights Racket, eh, Charlie?"

"Yeah." said Charlie Jingle nervously. "Except that nobody's got Jergen bought out."

"Hunh?" exclaimed Rabbit Markey.

"What I said—nobody's got—"

"I heard ya, Charlie. I heard ya the first time. You mean you never heard about Jergen?"

"Heard? Heard what?"

"Boyo boyo boy! Buddy, you are in the middle of the neatest fix in history. You mean to say you don't know what's happenin'?"

"Fix? What kinda fix, Rabbit? . . . Are you kiddin'? I can't even get my boy a fight, and you're talkin' fix!"

"Aw Boyy! Awww Boyyyy are you a dummy! Lissen! Whatta you doin' out here onna Coast?"

"Doin'? I'm tryin to set it up so I can get Tanker a fight, that's what I'm doin'!"

"You worked out a deal with some film company, huh?"

"That's right. Why?"

Rabbit Markey shot a glance to the right of him and one to the left, hunched his shoulders, pulled his trousers up, took Charlie by the lapel, and drew him close to a post. The buzzer sounded outside to announce that the race was within one minute of starting time.

"Charlie, you're about to be had. Now you're playin' it the way you was supposed to in the beginnin'. You was supposed to play ball with the Hollywood boys to begin with. Now you done it. Now the fix is in!"

"How the the hell can there be a goddam FIX?" screeched Char-

lie Jingle. "Tanker's level. Are you kiddin'?"

"Sure! Tanker's level! But how about the Contender? How about Hammerhead Johnny? How about Steamroller Jones?"

"You're crazy!" shouted Charlie Jingle. "It can't be! How the hell would you know?"

"You wanna know how I know? My daughter Marie—you remember her, she was a kid when you seen her—she's a secretary to Mike Bretz, the East Coast Assistant Vice of Pugs, Inc. . . She's got the whole map out, from the word go. Pugs, Inc. is puttin things in your way so that everybody thinks you got a real thing in the Tank. They're helpin you get a build-up, you see, as if they wanted to freeze you out. When you finally break through the freeze-out one way or the other, they're gonna have one hellofa drawing-card! Get it now, Charlie?"

Charlie Jingle walked away from Rabbit Markey, went some twenty paces, kicked a dent in a refuse-chute, and walked back.

"I don't believe it!" whispered Charlie Jingle hoarsely. "I don't believe it!"

The bugle blew outside. Rabbit Markey looked at Charlie, looked at his ticket, and started toward the race-track.

Charlie Jingle caught his arm. "Wait a minute, Rabbit."

Rabbit Markey shook his head.

"I already said enough to float me in blood, Charlie. Now lemme go and watch the bloody no-good fixed races."

"No, Rabbit. Tell me more.

Tell me who else is swingin' this deal?"

"Don't you know?"

"Harry Belok?"

Rabbit Markey nodded.

"Jergen?" asked Charlie Jingle with bated breath.

Rabbit Markey nodded his head.

"How they do it? Tinker with the Fighters?"

"You ever see Hammerhead get knocked off his feet?"

"I don't get it—they lemme buy my own way into the news, is that it? I think I'm perfectly legitimate. So does everybody else in the game. What then?"

"Then a story breaks someplace about the way Pugs, Inc. tried not to give you a fight. Everything looks like Pugs, Inc. is scared stiff of you because you can ruin them. Big build-up. Even Jergen goes to bat, confesses he tried to help you get the fight. Everybody's sore as hell at Pugs, Inc. They force a fight, Tanker goes in—and gets slaughtered. See?"

Charlie Jingle felt his guts deflate in a rush.

"Yeah," he said, dead-toned. "I see."

"What you gonna do?"

"I dunno. I got it set up with Galaxy Films to be waitin' in New York Rocket-Port with cameras. Couple of friends of mine are gonna fake a shootin with me when I get there. Guess I've got no choice. I'll have to go through with it now."

"Okay now," said Rabbit Markey. "Now lemme go and get ulcers over the cars." He gave Charlie his hand and they shook slowly.

"Take care, kid—and thanks."

"Nahhhh! Forget it! Forget you even saw me here! But don't forget what I told you. Harry Belok's got friends in LA, too. I got racing-ulcers, but I don't mind bein' alive with them. You get me?"

Charlie Jingle nodded again, and Rabbit Markey walked out into the roar of the Jet-Races. Charlie Jingle looked down at the ticket in his hand, ripped it in two, and let the pieces flutter to the floor.

Outside, he hailed a cab.

To board the Eastbound Rocket would have been to play into the very hands of his enemies. And he needed time to think—to figure his way out of the fix that had been planned for him. Perhaps by avoiding the Rocket trip, he would avoid the pre-planned shooting, the filming of which was also pre-set, and so avoid the press, and whatever consequent notoriety would follow the whole affair at the Rocket-Port.

So he hired a car and started to drive East.

**T**HERE AROSE a great hue and cry at the disappearance of Charles Jingle, who had been a registered, scheduled passenger on the Eastbound Rocket. What had happened to him? What mystery cloaked his disappearance? Galaxy Films made it known that Charles Jingle suspected an attempt on his life. Why? asked a conscientious columnist. Who might have reason enough to threaten the life of a Robot-Trainer? Mischa Hannigan,

innocently and in a moment of anger at what he thought must be vengeful murder, stated that attempts had been made to intimidate Charles Jingle into selling out Tanker Bell. Who had done so? Mischa Hannigan would not say, though hinting darkly that a "well-known fixer" was at the bottom of it.

The Press probed deeper into the mystery. What about Charles Jingle's property, Tanker Bell? Was it so valuable that the proprietor should be murdered for not parting with it? If it was, why had there been no offer of a match from the Champion?

It was then that some bright reporter conceived the idea of questioning the Fight Commission as to its views on the shamefully clandestine affair. What had it to say? Nothing, was the reply. The bright reporter launched an attack on the Commission. The fight public wanted to know what the Fight Commission thought its function was, if not to expose underground tactics in the game?

Commissioner Jergen addressed the citizenry via television. He admitted that Charles Jingle had been to see him. He admitted he was unable to move due to a lack of tangible evidence. He would not name the parties accused by Charles Jingle because there was no real evidence at this date. He would further investigate the situation, using every resource at his command.

When Charlie Jingle arrived in New York two days later the lid was off the town. Everyone was

fuming at what had been perpetrated against him. Everyone understood why he had come into town unobtrusively.

What Charlie Jingle had sought to avoid had happened anyway. The play was in motion. There was no stopping it.

He watched the day-to-day developments in a state of paralyzed horror. It was a nightmare in which he was the principal, and yet, the bystander, the spectator. He had no choice but to follow. Rabbit Markey had shown him the truth, so that all things now had a double meaning, a reality and an unreality, another dimension, another depth.

When the press came to question him, Charlie fought the only way he knew. He denounced Pugs, Inc. as cheats, liars, and fixers. He denounced Commissioner Jergen, Harry Belok, the press, the Hollywood people, the prize-fight game, and the public in an attempt to break the whole business wide open.

But everyone understood.

"Mister Jingle is justified in his bitterness," said a reporter.

"Of course Charlie's sore. He's got a right to be sore!" said Commissioner Jergen.

"A horrible injustice. We were concerned over our reputation," said Kort Gassel of Pugs, Inc.

"The guy deserves a break!" said the fight public.

And Hollywood said, "We don't understand what prompted this unwarranted attack."

So there it was. Charlie Jingle spoke the truth, but nobody be-

lieved him. Tanker Bell was granted a match. The fix was in.

As a last resort, Charlie Jingle refused to let the Tanker fight. An uproar went up from the public. It was a matter of ethics. Tanker Bell was now their champion. He was the embodiment of everyman against the Organization, against injustice. Tanker Bell *must* fight!

It was then that Charlie Jingle understood. This was not simply a fight. This was part of a long-range plan to bring the public man to heel. This was part of a scheme to break the mass-individual spirit, because if Everyman stood with Tanker Bell as the champion of independant justice, and Tanker Bell were beaten—so would the public-independent spirit be.

But Charlie Jingle had his hands tied.

ON THE DAY of the fight, Charlie Jingle corralled the Tanker in the workshop and ordered the amazed Tanker to lie down on the work-bench for a "tune up". The Tanker protested.

"You crazy, Charlie? Whuffor? I never felt so good in my life!"

"Don't gimme any arguments, Tank. Stretch out and shuddup."

"But Charlie . . ."

"Stretch out, for God's sake!"

"What you gonna do?"

"Re-vamp you. I'm gonna run the tapes on the bout with the Contender, and stuff your memory banks with tapes on every fight was ever had with a Pugs, Inc. product. Then I'm gonna run tapes

on Hammerhead Johnny. I'm gonna key up your reflex-pattern to the point where you'll be operating so fast your joints are liable to break down in the ring."

Tanker stared at him, open-mouthed. "What for? Will you please tell me that? *What for?*"

"After I've fed you the tapes on the Contender and Hammerhead, you'll know, if those goddam memory-computers of yours ain't so rusty they can still work."

"You tryin' to teach me somethin' I don't know?"

"That's right."

"Why can't you just tell me?"

"If you figure it out yourself, you won't like it any more than if I told you; but you'll know it the hard way."

"What a hellofa way to teach me somethin'! Jazzin me up! My coordination is perfect, analysis-system is workin' like a voodoo charm, and you wanna jazz me up! It's like committin' suicide!"

Something in the Tanker's face changed, quickly and suddenly, as if a diamond-bright idea exploded inside his steel-plated head.

"Charlie?"

Charlie Jingle looked up from his assortment of tools. "What?"

"Is this a fix?"

Charlie Jingle looked at him, the flush of anger brightening his eyes. "Is that a joke, Tanker?"

"No, Charlie. A question."

"Stretch out." said Charlie Jingle gruffly.

"Answer me first, Charlie. Is it?"

"Whatta you think?"

"I dunno." said the Tanker,

stretching out slowly.

"You really wanna win that fight, kid?" asked Charlie Jingle, sad and tender.

"You know I do!"

"Trust me then, hah?"

The Tanker laughed, stretching out on the bench.

The light glittered cold on the smooth worn steel of the tools in Charlie Jingle's hands.

When the first Mechanical Pugilist was made, the Fight Commission made a number of demands. First, through each robot's sight-mechanism, it was established that each machine should be equipped with cameras by which they would record the activity of their opponent in the ring. If a foul was committed which had escaped the judges, the proof would thereby be recorded on the camera-tapes, which could easily be confiscated by the Fight Commission.

Secondly, there was a coordination system in each machine which could not be slackened without a noticeable difference in the conduct of the fighter, thus acting as a safeguard against the Trainer-Owner's voluntarily slowing their fighters down for illegal purposes. However, there were ways to slow a pug down. There were circuit-shortening devices, reflex-sabotaging devices, analysis-pattern disturbances, muscle-flexibility tensions—all of which cut down the fighter's efficiency to some degree. The trick, of course, was to do so without exposure, since all fighters were examined moments before they entered the ring, and were

subject to further investigation if the Judges deemed a fight suspiciously under expectation-level.

The machines then were constructed, so that, in essence, they were totally 'honest', and every part in them was recorded in a master plan, filed with the Fight Commission, so that nothing could be added, and certainly, nothing be subtracted from them, since their balance depended completely on very essential parts.

They were also constructed so that they had their weakness-points in exactly the same places men had theirs. If a machine struck hard enough and exactly enough on the point of its opponent's jaw, it would jar wires and electrical contacts badly enough to stop its operational function—thus the "knockout".

To all intents and purposes the fighting machine was constructed as much along human lines as was possible, even to the point of corruptibility. They all had a desire to be great fighting machines, and to go down in the annals of fight history. They were, each and every one, made for the purpose of practicing a deadly, brutal art by which men could sublimate the brutality that nested like a sleeping tiger in their own persons. Provision had even been made for the sight of flowing blood. The tough rubber skin that made the robots appear human contained the red oil that lubricated the steel "innards", and if the rubber skin split the more the bloodthirsty members of the audience were satisfied.

What Charlie Jingle did, when he operated on the Tanker, was what might be called, in human terms, "over-conditioning" him. He tightened and sped his reflexes, shortened the length of his wires so that electrical responses had shorter distances to travel, sped up his Analysis-Pattern, hyper-toned his muscle-flexibility, and generally made him a nervous wreck.

Then, as a final touch, he ran the tapes he had promised to run, striving to bring the truth to the Tanker.

"How do you feel?" asked Charlie as he watched Tanker Bell sit up, his face twitching.

"Like a damn screwball!" said the Tanker.

"Did you get the message?"

"Yeah. Hammerhead never fought like the way he fought me in his life! What they do to him?"

"Fixed him." said Charlie Jingle soberly.

"The Contender too?"

"Well you saw the tapes. They're all stuck away in that memory bank of yours. Whatta you think?"

Tanker nodded, his head jerking up and down uncontrollably.

"Fixed him too. But I don't get the picture yet. Do you, Charlie?"

"Sure, I get it. The night I called the Arena to match you against the Contender because Kid Congo got squashed in that accident, they had a fix workin between them. Kid Congo was supposed to upset the Contender, see? But they must've both been fixed a

little to fool the Judges. So there's this accident, see? This throws the whole plan into a panic—Congo's out, it's too late to un-fix the Contender. If the Auditorium puts in a fighter who's strictly legitimate, everybody will know it was a fixed. I call. They figured I had a Tank, maybe you'd look pretty bad in there, and nobody would know the difference. Okay, what happens? You nail the Contender, because, after all, you ain't that bad—does it figure?"

"Boy! Does it!" said the Tanker, his head jerking. "Why can't you go to the authorities, Charlie?"

"Because this fix is piled a mile high, Tanker, in all directions."

"Whadda you mean?"

"I mean I can't go to the Commission."

"What we gonna do? Just get belted around?"

"We got no choice." said Charlie Jingle with a shrug.

"The hell we ain't! If you think I'm gonna go into a ring and get mauled, you're off your rocker!"

"We can't call the bout off." said Charlie Jingle dejectedly.

"Well who said anything about callin' it off?" shouted Tanker.

"I did the best I could! I tuned you up. I timed you. I jazzed you up good—"

"But you *still* don't think we can beat that Iron-Man Pugg!"

"That's right."

"So whattam I supposed to do when I go inter the ring tonight? Throw down my hands and give it up?"

"You do what I did. Do your best."

"Alla while knowin' I don't stand a chance?"

"If I did it, you can do it."

"You know what you don't have, Charlie? You don't have faith!"

Charlie Jingle snorted in disgust.

"Who hatched you? Some preacher?"

"No, no, that's the truth, and you know it!"

"The truth," roared Charlie Jingle in a white rage, "The truth is that everything's a lie! The truth is that everything's fixed from the word go, from the bottom up and the top down. That's the god-dam truth for you!"

Tanker shook his head stubbornly.

"Boy, you sure are singin' a different song, all of a sudden. I dunno what the hell happened to you, but you don't even sound like yourself!"

"Okay! Okay! Wait and see when they klobber you with it tonight, Tank, my boy! Wait and see when it hits you square between the eyes."

The Tanker leaped up from the bench, jerking his fists in the air uncontrollably.

"I'll murder him!"

"No you won't. Listen, I been fighting against fixes and fixers all my life. Tanker. I never believed, and I never wanted to believe, that they had it sewed away, that the big operators had us tucked away into their pockets. Now I'm convinced! They sold me their dirty bill of goods. I'm sewed in with the rest of them."

The Tanker shook his fist under Charlie Jingle's face. Oil had

drained from his system up into his face and head, lubricating his head-mechanisms as protection from strain, as his head-parts were being overworked. His "skin" looked blotchy.

"Charlie! After this is over, I want quits with you! You hear me? I want quits!"

"Suits me fine." said Charlie Jingle.

"I'll bet—" began Tanker Bell, "—I'll bet you ain't even gonna bet on me! Are you?"

"Sure! I'm gonna bet a thousand on you in the open market. Then what I'm gonna do is let Hannigan bet five thousand for me on the sly on the Champ. That way, at least I'll come out with somethin'."

"Even Belok's better than you! At least he's got guts enough to fix fights. You ain't even got guts enough to fight one!"

Charlie Jingle walked to the door.

"You better rest up," he said, and swung the door open.

"Don't worry about me," said the Tanker. "I can take care of myself!"

Charlie Jingle looked at him a moment, a cloud of inexpressible something in his eyes.

"See you later," he said quietly, and shut the door.

**C**HARLIE JINGLE strode, shoulder to shoulder with Tanker Bell, down the long cluttered corridor of Golum Auditorium toward the roped ring. There swelled, to either side of them, the surging roar of the crowd, and it seemed to Charlie that

the sound lifted the bitterness of his expression from his face and floated it forcibly toward the rafters overhead, for all to see, and to know that Charlie Jingle had given up the good fight, Charlie Jingle was tired, had been had, was through, inside and out. The fix was in. There was no way to stop it. That was the way the bugle blew.

They climbed into the ropes and the roar of the crowd boomed and grew, electric with the mood and feel of battle. Swiftly Charlie disrobed the Tank, sat him on a stool, and looked over at the Champion's corner. Iron-Man Pugg was already seated. On his face, as on Tanker's, there was the brooding look of combat, of dead-sure certainty that he, and he alone would win. And Charlie felt a jolt of sick depression in his stomach, because he knew it was true.

The robot-referee came into the ring, and the crowd immediately hushed. A dime-sized microphone on an almost invisible wire dropped down from the batteries of overhead lights (this was more in the line of tradition than need, since the robot-referee had a built-in mike of his own), and the referee held up his hands for complete silence. The crowd shushed itself to a murmur, and the referee went through his introductory piece. After each fighter had received the crowd's roar of approbation, the referee signalled for them to come to the center.

They went back to their corners. Charlie shook the robe from the Tanker's back as a hum of excite-

ment charged through the crowd. The buzzer sounded and the fighters rose, ready. Charlie stepped through the ropes, slapped Tanker on his back.

"Do your best, Tank."

The Tanker looked at him, face grim and solitary, shut away from Charlie.

"My best ain't enough, Charlie. I'll do more than my best."

Charlie Jingle was about to say something else when the bell banged away. He scooped the stool out of the ring and watched the Tanker shuffle into center to meet the Champion.

Thirty rounds of fighting is tough work. Even for machines. Thirty rounds of fighting, at five minutes per round, is one hundred and fifty minutes, two and a half hours, of solid, shattering labor. A machine overheats the way a man does under constant stress. It's joints expand, its lubricant thins, things begin to stick, friction wears parts. While a fight-machine's body works against time, its opponent pounds it, jars it, jolts it. Wires loosen. Gears slip. Tubes shatter. The machine slows, becomes gawky. Its timing is a split second off. Its flexibility, its speed, are worn down.

When its pattern-analysis system becomes damaged, it cannot decipher the feints, the systems and combinations of its opponents' strategy. An eye is shattered, and the Trainer replaces it, since he carries a spare pair. The same one is smashed again, and he cannot replace it, because the Commission only allows a single replacement

during a fight. Its "skin" is split and the colored oil flows, the life-blood of the machine. The Trainer is allowed one vulcanizing skin repair job per bout. If it happens again, the fighter must go on, fighting against the time when the loss of oil will endanger his operating efficiency.

Sometimes the machines strike each other with such deadly impact, they dent the inner frame-work of the body, putting strains on a section of wiring or electrical tubing. Then the damaged machine must fight defensively to protect its weakened section. The offender will work out elaborate punch-patterns to trick the defender into somehow thinking he understands the aim of each pattern of punches and where the final concentration will be. And suddenly, with uncanny craftiness, the offender switches its attack to an unexpected area.

This is the function of the pattern-analysis system in each fighter. To map, plan, digest the opponent's habits of fighting, then compute them, set up a given system of punches itself which will clutter the opponent's memory banks, and then radically change the mode of attack and system of fighting. The process is mathematically complex. It is the process of the human brain operating at high speed.

The first fifteen rounds of fighting are generally devoted toward "faking" patterns. Each fighter labors to out-fox the other. In a sense, the first fifteen rounds of fighting are preliminary. They give

the fight fans an opportunity to warm up to what is coming. Then it begins. The lightning-fast pace shifts, becomes slower. The fighters seem to be gliding through water. Then one unleashes an attack, sets an impossibly fast pace. The game has started . . .

Charlie Jingle gripped the edge of the ring hard, digging his hands into the canvas, straining and twisting in tortured anguish with every slashing blow that struck the Tanker. He watched the two fighters weave, jerk, dart—bodies and arms flashing blurs, smashing blows one to the other in sequences that were too complex for the eye to follow in detail. He groaned, cursed, hoped, bellowed, roared and screamed along with two thousand nine hundred and seventy four other human beings in the arena.

The round was the twenty-sixth. This was the stretch. The final, ineradicable stretch. The bell banged away and the fighters parted under the glare of the lights, dancing away from each other to their corners. Charlie shot the stool into the ring and went through the ropes. Tanker dropped like a chunk of hot lead onto the stool.

"How do you feel, boy? How do you feel?" prompted Charlie, pumping the cooling-fluid into Tanker's insides.

"Hot," rasped the Tanker. "Hot as hell."

"Want me to throw in the towel?" asked Charlie, working fast, working the pump up and down quickly.

"No, goddamit. Wrap it around

your eyes if you can't take it."

Charlie worked the body, stimulating the free flow of oil through the system.

"How'm I doin'?" asked the Tanker grudgingly.

"Well at least you're still in there."

"By God, Charlie! Fighting Machines ain't supposed to be too emotional, but if anybody gets me sorer than you do so help me, I'll murder him!"

Charlie Jingle worked the body fast, checked the heated joints for too much strain.

"Favor the right. The elbow's gettin' creaky. And save the fight for the Champ. You'll need it."

The buzzer sounded, Charlie shoved his tools through the ropes onto the edge of the deck, climbed out, and holding onto the edge of the stool, he said, "Watch his Three-Six combo. He's gonna angle for your jaw pretty soon."

Tanker turned, looking down at him.

"You don't trust me at all, do you?"

The bell banged and quickly Tanker was on his feet, moving in his curious, side-long motion.

By the end of the twenty-seventh, Tanker came back to his corner lame. The Champ had dented his forehead.

"How is it?" asked Charlie Jingle.

"Fine," said Tanker thickly. "It's fine." There was a slur to his voice, which tipped off what was beginning to happen. Tanker's co-ordination system had been damaged.

"He's crackin' down, now. He's got all his power behind them punches. You can see it when he pivots."

"Yeah? Well I kin feel it when he punches," said the Tanker.

Charlie pumped him up with cooling fluid, worked his body. In the pit of his stomach was a sickness, a feeling of helplessness because Tanker's trouble was not where he could reach it, now. Now it was inside.

"He's gonna knock your head off, this one, Tank. You got a dent in it."

"I know I got a goddam dent. You don't hafta tell me."

Charlie put his gear out of the ropes.

"I told you it was a fix. Don't blame me for nothin'."

"Yeah. You wash your hands of it. Just like that guy in the whudda-yacall . . ."

"Bible," said Charlie Jingle.

"Yeah," said Tanker. The bell sounded and he sprang to his feet.

At the end of the twenty-eighth, Tanker was dragging his feet, hanging on by a thread of will, except of course that there was no will in a fighting machine except the mechanistic desire to be a great fighting-machine.

"He'll nail you this one." said Charlie Jingle.

"Thass what you think," challenged Tanker.

"That's what I know. The fans are already going to the windows to collect their bets."

"Yeah? They got another guess com—Why ain't you collectin'?"

"I gotta stick it out, you know that!"

"You mean to say you really bet on Iron Man?"

"Sure," said Charlie Jingle, pulling a ticket out of his shirt pocket. "See?"

Tanker bent close, scrutinizing the ticket. He looked up into Charlie's face, his own blotchy with color.

"Five thousand dollars you bet on that bum?"

Charlie Jingle laughed.

"He don't look like no bum from where I am."

The buzzer sounded, drowning out the string of curses the Tanker loosed at him. Charlie calmly shoved his equipment out of the ring.

"Make it look good right to the end, you hear?"

The bell banged. Tanker Bell got up slowly, moving in a clumsy waddling gait toward the Champion, arms hanging like stiffened lead weights by his sides, head bulled forward, shoulders hunched. He did not spring, did not dance. He shuffled forward, shoulders rocking from side to side.

Iron-Man Pugg saw the stance of the beaten fighting-machine. He knew the dead-locked expression in the face, knew the shuffling, springless walk that indicated that the opponent was cold, was dead on his feet, jammed away inside, locked and frozen. But there was always the suspicion of trickery in him when he saw it.

He danced in lightly, speared the Tanker's head with a long series of jabs, chopped away at his mid-

section, and then, as if he himself were absolutely cocksure, lowered his guard just a fraction of an inch out of the Tanker's reach. Nothing happened. The Tanker moved toward him, dead on his feet, arms limp. The Champion had to blast him back with a murderous right to prevent a head-on, chest-on collision. The Tanker staggered back, wobbled, his knees threatened to unflex and buckle, then the built-in instinct to go on picked him up, and he straightened.

Iron Man could hear, behind and around him, the swelling roar of the crowd. He knew it was for him. He had won. A hard, good fight. He had won. It remained now for him to put the trimmings on the package. Artfully he flirted in and around the Tanker, jabbing him lightly, ripping powerful right-hand shots to his head, toying with him. The crowd was roaring for blood. They wanted the finish. The Champion moved forward, wound up. He started his famous knock-out sequence of punches, landing the first and second carefully, playing to his audience so that they could see what was happening and appreciate from the beginning what was about to happen. The Champion was enjoying himself. He worked with flash and flourish, and the crowd began to love it.

Then Tanker Bell came alive. The Champion was first to see the expression of his face, and a split-second before it happened, he knew he had been tricked. He would forever remember that expression. It was almost human. It was an expression of hatred. Of murderous,

long-controlled rage, diabolical and lethal.

Tanker Bell ripped a blow to his jaw so well-set, so precise, so accurate, that when the Champion's head snapped back, the cable at the back of his neck broke. The Champion fell over on his back, striking the deck like fallen thunder. The Champion was not only 'out'—he was 'dead'.

There was a great, still silence in the arena as Tanker Bell strode back to his corner. It was as if the air, and sound, and people had been frozen. The Referee came to his senses first, stood over Iron-Man, and counted, with long strokes of the arm. At the last stroke, chaos broke loose. Fans and officials swarmed into the ring. The spectators roared. But Tanker Bell had eyes for one single human being in that arena. Charlie Jingle.

When he turned, Tanker saw Charlie Jingle doubled over the ropes, laughing.

A reporter pulled Tanker to the middle of the ring before he could get to Charlie. While they quizzed him and prodded him, Charlie Jingle remained doubled over the ropes in a violent fit of hysteria.

Finally they drew Charlie Jingle into the circle at ring-center. Had he had any doubts that Tanker would win?

"Never!"

Did he know that Tanker was faking toward the last? Certainly, came the laughing reply.

How much money had he bet on his fighter?

Ten thousand dollars, came the uproarious reply, and Tanker Bell bellowed, "He's a liar! He never bet a thing!"

The Press was astonished.

The Officials perked up their suspicious noses.

What did Tanker Bell mean?

"Ask him!" accused the glaring Tanker.

Did Charlie Jingle have the bet ticket with him? After all, Mister Jingle—news.

Charlie Jingle, laughing, with a flourish, produced a ticket from his shirt pocket.

Tanker Bell stared at it, goggle-eyed.

What would Charlie Jingle do with the money from the proceeds?

"Ruin Pugs, Inc.," said Charlie Jingle. "Me and a California Rabbit are goin into business together. Ruinin' Pugs, Inc."

"Psychology." growled the Tanker. "The bum used his god-dam psychology on me."

What was Tanker Bell referring to?

"Leave him alone," said Charlie Jingle, putting his arm around Tanker's shoulders. "Can't you see he's punch-happy?"

**E N D**

## **FAVORITE PUZZLES AND QUIZZES**

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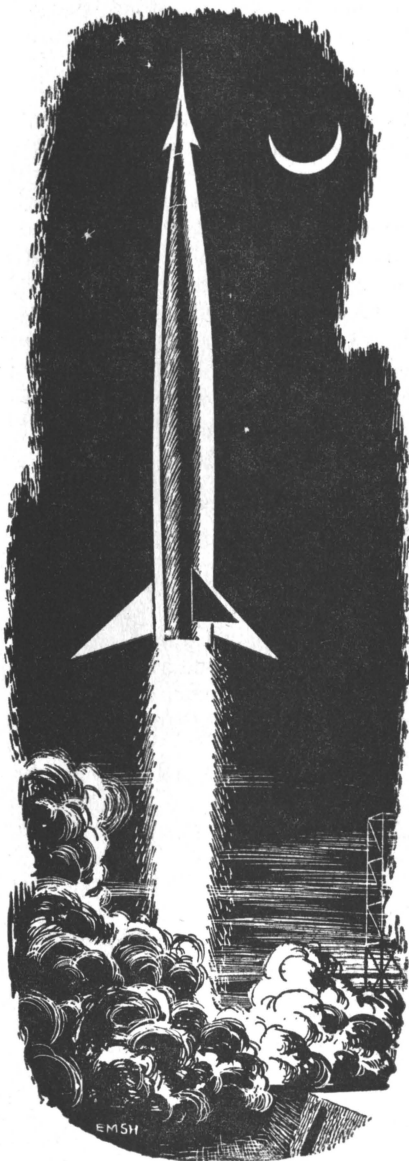
BY ISAAC ASIMOV

*Even 8000 years is not too long when instinct drives a creature. And Kane was willing to wait . . .*

## DOES A BEE CARE?

THE SHIP began as a metal skeleton. Slowly a shining skin was layered on without and odd-shaped vitals were crammed within.

Thornton Hammer, of all the individuals (but one) involved in the growth, did the least physically. Perhaps that was why he was most highly regarded. He handled the



*Illustrated by Ed Emsh*

mathematical symbols that formed the basis for lines on drafting paper which, in turn, formed the basis for the fitting-together the various masses and different forms of energy that went into the ship.

Hammer watched now through close-fitting spectacles somberly. Their lenses caught the light of the fluorescent tubes above and sent them out again as high-lights. Theodore Lengyel, representing Personnel of the corporation that was footing the bill for the project, stood beside him and said, as he pointed with a rigid, stabbing finger,

"There he is. That's the man."

Hammer peered. "You mean Kane?"

"The fellow in the green overalls, holding a wrench."

"That's Kane. Now what is this you've got against him?"

"I want to know what he does. The man's an idiot." Lengyel had a round, plump face and his jowls quivered a bit.

Hammer turned to look at the other, his spare body assuming an air of displeasure along every inch. "Have you been bothering him?"

"Bothering him? I've been talking to him. It's my job to talk to the men, to get their viewpoints, to get information out of which I can build campaigns for improved morale."

"How does Kane disturb that?"

"He's insolent. I asked him how it felt to be working on a ship that would reach the moon? I talked a little about the ship being a pathway to the stars. Perhaps I made a little speech about it, built it

up a bit, when he turned away in the rudest possible manner. I called him back and said, 'Where are you going?' And he said, 'I get tired of that kind of talk. I'm going out to look at the stars.'"

Hammer nodded. "All right. Kane likes to look at the stars."

"It was daytime. The man's an idiot. I've been watching him since and he doesn't do any work."

"I know that."

"Then why is he kept on?"

Hammer said with a sudden, tight fierceness, "Because I want him around. Because he's my luck."

"Your luck?" faltered Lengyel. "What the hell does that mean?"

"It means that when he's around I think better. When he passes me, holding his damned wrench, I get ideas. It's happened three times. I don't explain it; I'm not interested in explaining it. It's happened. He stays."

"You're joking."

"No, I'm not. Now leave me alone."

Kane stood there in his green overalls, holding his wrench.

Dimly he was aware that the ship was almost ready. It was not designed to carry a man, but there was space for a man. He knew that the way he knew a lot of things; like keeping out of the way of most people most of the time; like carrying a wrench until people grew used to him carrying a wrench and stopped noticing it. Protective coloration consisted of little things, really,—like carrying the wrench.

He was full of drives he did not fully understand; like looking at

the stars. At first, many years back, he had just looked at the stars with a vague ache. Then, slowly, his attention had centered itself on a certain region of the sky, then to a certain pin-pointed spot. He didn't know why that certain spot. There were no stars in that spot. There was nothing to see.

That spot was high in the night-sky in the late spring and in the summer months and he sometimes spent most of the night watching the spot until it sank toward the southwestern horizon. At other times in the year he would stare at the spot during the day.

There was some thought in connection with that spot which he couldn't quite crystallize. It had grown stronger, come nearer the surface as the years passed and it was almost bursting for expression now. But still it had not quite come clear.

Kane shifted restlessly and approached the ship. It was almost complete, almost whole. Everything fitted just so. Almost.

For within it, far forward, was a hole a little larger than a man; and leading to that hole was a pathway a little wider than a man. Tomorrow that pathway would be filled with the last of the vitals and before that was done, the hole had to be filled, too. But not with anything *they* planned.

Kane moved still closer and no one paid any attention to him. They were used to him.

There was a metal ladder that had to be climbed and a catwalk that had to be moved along to enter the last opening. He knew

where the opening was as exactly as though he had built the ship with his own hands. He climbed the ladder and moved along the catwalk.

It was dark in the hole and, of course, there was no ventilation, but Kane paid no attention to that. With the sureness of instinct, he clambered upward toward the hole that would receive him, then lay there panting, fitting the cavity neatly as though it were a womb.

In two hours they would begin inserting the last of the vitals, close the passage and leave Kane there, unknowing. Kane would be the sole bit of flesh and blood in a thing of metal and ceramics and fuel.

Kane was not afraid of being prematurely discovered. No one in the project knew the hole was there. The design didn't call for it. The mechanics and construction men weren't aware of having put it in.

Kane had arranged that entirely by himself.

He didn't know how he had arranged it, but he knew he had.

He could watch his own influence without knowing how it was exerted. Take the man, Hammer, for instance, the leader of the project and the most clearly influenced. Of all the indistinct figures about Kane, he was the least indistinct. Kane would be very aware of him at times, when he passed near him in his slow and hazy journeys about the grounds. It was all that was necessary,—passing near him.

Kane recalled it had been so before, particularly with theore-

ticians. When Lise Meitner decided to test for barium among the products of the neutron bombardment of uranium, Kane had been there, an unnoticed plodder along a corridor nearby.

He had been picking up leaves and trash in a park in 1904 when the young Einstein had passed by, pondering. Einstein's steps had quickened with the impact of sudden thought. Kane felt it like an electric shock.

But he didn't know how it was done. Does a spider know architectural theory when it begins to construct its first web?"

It went further back. The evening the young Newton had stared at the Moon with the dawn of a certain thought, Kane had been there. And further back still.

**THE PANORAMA** of New Mexico, ordinarily deserted, was alive with human ants crawling about the metal shaft lancing upward. This one was different from all the similar structures that had preceded it.

This would go free of Earth more nearly than any other. It would reach out and circle the Moon before falling back. It would be crammed with instruments that would photograph the Moon and measure its heat, emissions, probe for radioactivity, and test by micro-wave for chemical structure. It would, by automation, do almost everything that could be expected of a manned vehicle. And it would learn enough to make certain that the next ship sent out *would* be a

manned vehicle also.

Except that, in a way, this first one was a manned vehicle after all.

There were representatives of various governments, of various industries, of various social and economic groupings. There were television cameras and feature writers.

Those who could not be there, watched in their homes, and heard numbers counted backward in painstaking monotone in the manner grown traditional in a mere three decades.

At zero, the reaction motors came to life and ponderously the ship lifted.

Kane heard the noise of the rushing gases, as though from a distance, and felt the gathering acceleration press against him.

He detached his mind, lifting it up and outward, freeing it from direct connection with his body in order that he might be unaware of the pain and discomfort.

Dizzily, he knew his long journey was nearly over. He would no longer have to maneuver carefully to avoid having people realize he was immortal. He would no longer have to fade into the background, no longer wander eternally from place to place, changing names and personality, manipulating minds.

It had not been perfect, of course. The myths of the Wandering Jew and the Flying Dutchman had arisen, but he was still here. He had not been disturbed.

He could see his spot in the sky. Through the mass and solidity of the ship he could see it. Or not

"see" really. He didn't have the proper word.

He knew there was a proper word, though. He could not say how he knew a fraction of the things he knew except that as the centuries had passed he had gradually grown to know them with a sureness that required no reason.

He had begun as an ovum (or as something for which "ovum" was the nearest word he knew), deposited on Earth before the first cities had been built by the wandering hunting-creatures since called men. Earth had been chosen carefully by his progenitor. Not every world would do.

What world would? What was the criterion?" That he still didn't know.

Does an ichneumon wasp study entomology before it finds the one species of spider that will do for her eggs and stings it just so in order that it may remain alive?

The ovum spilt him forth at length and he took the shape of a man and lived among men and protected himself against men. And his one purpose was to arrange to have men travel along a path that would end with a ship and within the ship a hole and within the hole himself. It had taken eight thousand years of slow striving and stumbling.

The spot in the sky became sharper now as the ship moved out of the atmosphere. That was the

key that opened his mind, the piece that completed the puzzle.

Stars blinked within that spot that could not be seen by a man's eye unaided. One in particular shone brilliantly and Kane yearned toward it. The expression that had been building within him for so long burst out now.

"Home," he whispered.

He knew! Does a salmon study cartography to find the headwaters of the fresh-water stream in which years before it had been born?

The final step was thus completed in the slow maturing that had taken eight thousand years, and Kane was no longer larval, but adult.

The adult Kane fled from the human flesh that had protected the larva, and fled the ship, too. Kane hastened onward, at inconceivable speeds, toward home, from which some day it, too, might set off on wanderings through space to fertilize some planet with its ovum.

It sped through Space, giving no thought, to the ship carrying an empty chrysalis. It gave no thought to the fact that it had driven a whole world toward technology and space-travel in order only that it might mature and reach its fulfillment.

Does a bee care what has happened to a flower when the bee has done and gone its way?

**E N D**

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**In the August IF:** A sensational new guided missile article so hot it has to be *anonymous*! Plus fiction by Alan E. Nourse, Tom Godwin, Charles L. Fontenay, Lloyd Biggle, Jr., and others.



**. . . ON THE**

*If you've sometimes found salesmen irresistible,*

*it may come as quite a severe shock to you*

*to find out why you never had a chance to say no.*

**BY LLOYD BIGGLE, JR.**



*Illustrated by Virgil Finlay*

## DOTTED LINE

### 1. ERF ZEDDEN

I'VE BEEN sleeping one off, stretched out nice and comfortable in some shrubbery on a rise that overlooks the Detroit River. It's been a balmy night, and I wake up feeling good and lie there looking around, and—Zip! This fellow comes stumbling out of nowhere, trips, and flops down on top of me.

Out of nowhere, I said. I'm watching, and one second he isn't there, and the next second he is. Never saw anything like it.

I roll out from under him and get my breath back and look up, to see if maybe he fell out of an air car. There aren't any air cars.

He sits up and looks at me, and rubs his eyes. "Where am I?" he says, and he talks like his mouth is wired shut.

"That's a real easy one," I say. "Let's talk about how you got here."

He stands up and takes a few steps, craning his neck and staring in all directions, and then he comes back. "Where am I?" he says again.

"New Detroit," I say. "Down by the river, as maybe you've noticed."

He takes another look around, and gets mad. "Look," he says. "I know Detroit backwards, and there isn't any park that looks like this. Where's the Civic Center? And how come I can't see the Penobscot Building? This shouldn't be far from the center of town."

I'm looking him over, trying not to laugh at the way he talks and at the queer clothes he's wearing. He's not a bad-looking fellow, young and well-built, though he has his hair cut straight across the top in the weirdest haircut I've ever seen. I'm beginning to wonder if maybe he hasn't escaped from somewhere, if you know what I mean.

"Never heard of those places," I say, "and you're about twenty miles from the center of town."

He sits down again, looking so bewildered I begin to feel sorry for him.

"This is Detroit, Michigan, U.S.A.?"

I tell him that it's New Detroit, and I've heard it was Michigan Province, though I can't make any guarantee. And the letters he mentions don't mean anything to me.

He tries again, like a child trying to get something straight. "This is Detroit . . ."

"New Detroit."

"Michigan . . ."

"Michigan Province—maybe."

"It's July fifteenth . . ."

"Somewhere around that time," I say. I haven't been keeping a close count on the days.

I decide maybe I'd better get him out of sight until I make up my mind about him, so I take his arm and start walking, and he follows along without saying anything.

He keeps looking around, though, like he's never seen New Detroit before. And if he hasn't, I can't blame him for looking. It was rough on those cities that got wiped out in the big war, but they had the advantage of a fresh start. New Detroit is a beautiful place—the whole city is one big park, with all of the commercial places and ground transportation and a lot of the dwellings underground, and just the apartment communities stretching up into the sky at regular intervals.

He looks back at the river. "Are we far from Lake Erie?" he says.

"Not far. You can see it from an air car, if you go up high enough."

"And Lake Saint Clair?"

"You mean Lake Clair. Real close."

"And that's the Detroit River?"

"Never heard it called anything else."

"And this is Detroit?"

"New Detroit."

He takes a deep breath. "What year is this?"

"2337," I say.

And so help me, the man passes out.

I signal an air cab, and he comes

to a little later, and I get him down to the seventh level to my hotel room without any trouble. I drop a coin in the visiscope, and leave him sitting there in front of the screen watching while I go out to get him some presentable clothes. When I came back he's still sitting there, but he looks about ready to explode.

"No advertising!" he says.

"What's that?" I say.

"Why, advertising. You know—they talk about a product, or sing songs about it, to try and make people want to buy it."

"Sounds silly to me," I say. "Never heard of it. Don't think it would work. Singing a song wouldn't make *me* want to buy anything."

"But it does work," he says. "Damned if the man isn't serious. 'You see . . .'"

Then he takes a long look at me, and says, "Skip it." And after a while he starts in again. "This is Detroit?"

"New Detroit," I say.

"And there's no advertising?"

"Never heard of any."

"How do things get sold?"

"Why, there are salesmen all over the place. They don't bother me, of course, because I'm a space bug, and our credit isn't worth much. I go to a merchandise center when I want something, and pay cash. Now let's get these clothes on."

I get that funny outfit off of him, and get him into the clothes I'd bought. He doesn't mind the shorts, but he raises a big fuss about the cape. "What's the sense in wearing a transparent cape?"

"Everybody wears them," I say.

"I don't think much of it, either. We wear more practical things in space."

"Everybody—you mean women wear them?"

"Sure," I say, and give him a wink. "Some wear more transparent ones than others."

"My name is Mark Jackson," he says slowly. "I'm an automobile salesman—a *good* salesman. I live in Detroit, and the year is 1957, and I want to go home."

"My name is Erf Zedden," I say. "I'm a space bug, but probably not a very good one. I work on a Mars-Callisto ore freighter, and I'm on a six-month leave. First time on Earth in over five years, and the year is 2337. And what the hell is an automobile?"

He doesn't say anything, so I slap him on the back and tell him I could use a drink and he looks like he could use more than one, so we go up two levels to a bar that's run by an ex-space bug.

This fellow Jackson acts real queer. He keeps staring at the women, and while I must admit that in that bar their capes are more transparent than in most places, I begin to wonder if he's ever seen a woman before.

"This is 2337?" he says finally.

"Until next January," I say.

"I've been trying to think what could have done it," he says. "There was that fall-out from the Nevada Hydrogen Bomb test, and all the papers were screaming about it, though the scientists said it wasn't dangerous. And then there was that damned X-ray machine . . ."

He stops to take a good drink of

Martian Gin, and I don't say anything, though I'm wondering what the hell he's talking about.

"I went to sell a car to a doctor," he goes on, "and while I was waiting to see him I leaned against the X-ray machine, and somehow the damned thing got turned on. The doctor said it was only a few seconds, and there was no harm done. I can't think of anything else peculiar, but there probably was something. It was that kind of day. And the automobile accident finished everything off. I was driving away from the doctor's office, and this kid ran smack out in front of me. The top was down on my convertible, and when I swerved I hit a utility pole, and it threw me clean over the fence into a Detroit Edison Company transformer. I just had time to think, 'This is it, boy!' and then here I was. 2337, you say?"

"Until next January."

He takes another man-sized drink of gin. "I don't believe it."

I tell him he'll forget his troubles if we pick up a couple of girls, but he says no, he wants to think things over. So we go back to my hotel room, and the place is jammed with police. Someone saw me bringing him in, and reported it. They take the two of us, and all of those queer clothes of his, to Police Central, and it takes me two days to convince them that I don't know anything about him. When I leave they won't tell me what they've done to him, so I figure they're holding him for psych-conditioning. Well—I know I did the best I could for him. My leave still has four months to run, and I have

money left, so I take the next rocket to New York.

## 2. PROF. JOHN PARKINS

IT WAS EARLY August of 2337 when I had a letter from my old friend Bran Rastin, Police Commissioner of the Michigan Province. The case which he described to me was psychologically routine, but it had its intriguing aspects. I was, of course, happy to be of any possible assistance. There was no Boston-New Detroit rocket service at that time, so I took the shuttle plane to New York, when I caught the New Detroit rocket.

What I found was astonishing. I spent three days, all told, studying the various artifacts that the alleged man-from-the-past claimed to have brought with him, and listening to recordings of the various interviews which he had had. I also discussed his case in detail with the doctors in charge, and then I requested an interview.

Attendants brought him into the room. It was obvious that they considered him violent. His face was young and good-looking, in spite of its sullenness. His physique was impressive. He appeared to be a leader, a man accustomed to dominating.

"I don't recognize you," he said angrily. "What's your specialty? Lie detector tests? Sanity tests?"

He took a step forward, and the attendants leaped to restrain him. I waved them away and dismissed them. I had already decided that this Mark Jackson, whatever else he might be, was not insane.

"Sit down, please," I said.

We sat down facing each other across a long table, where Jackson's personal effects and odd clothing were spread out.

"I'm John Parkins," I told him. "Professor of American History at Harvard University. I've examined your property, and listened to the recordings of the interviews you've had."

"And like everyone else, you think I'm nuts!"

I stared at him. "What a quaint way to put it! But no, I don't doubt your sanity. I believe you're telling the truth. There's no denying the genuineness of these things. The monetary value would not be tremendous, but a number of museums would be delighted to have them. And then there's your amazingly detailed knowledge of certain aspects of twentieth century life which have always puzzled me. Yes, I believe you, incredible as your story seems."

He jumped to his feet and paced back and forth for a moment. "That's a switch. Does that mean I get out of here?"

"Switch . . ." I murmured. Everything the man said left me more convinced. Even his odd accent should have been conclusive. I said reluctantly, "No, it does not mean that you can be released. I have been unable to convince the doctors."

"Oh, great. You believe me, and now I suppose they have you in here with me!"

I smiled and shook my head. "No. I've come to give you some advice. The doctors are determined to cure

you of your delusions. Let them cure you."

"How?"

"Just accept what they say, and learn as much as you can about present-day civilization. The authorities are rather disturbed about you, you know. The mere fact that your fingerprints are not registered anywhere has thrown four branches of the government into confusion. Don't disturb them further. Just do what you're told, and pretend to believe what you're told, and eventually you'll be released. Then come to me, and I'll manage a teaching position for you. You should make an excellent historian."

"No, thank you," Jackson said. "I'm a salesman—a *good* salesman. Teaching wouldn't interest me."

"Think it over, anyway. And remember—the sooner you cooperate, the sooner you'll be released."

The attendants took him away, and I returned to Boston. I continued to give considerable thought to this Mark Jackson, for a more perplexing problem has not come to my attention in all my years of scholarly investigation. Finally I wrote to Arnold Stephens, a cousin of my wife, who is personnel manager of the Terra Sales Corporation. I outlined what I believed to be the facts in the Jackson case, and asked him if he would be able to give the young man assistance in establishing himself.

He wrote back that he would be happy to interview him, but that he could promise no more consideration than would be extended to any other applicant for a sales

position. I immediately contacted the New Detroit police, and found that I was too late. Jackson had been certified cured and released, and as far as they were concerned he had disappeared. I gathered that they were only too pleased to have him off their hands.

### 3. ARNOLD STEPHENS

**M**ARK JACKSON came to the offices of Terra Sales Corporation only a few days after I had received Professor Parkins' letter concerning him. I recognized his name immediately, of course, and assumed that the Professor had sent him.

For many years I have interviewed all sales applicants myself, as I am considered an excellent subject for this task. I had him sent into my office, and never have I seen a more solemn, determined young man. Other than this singular quality, there was nothing obviously different about him. The odd inflection in his speech I could have overlooked, and otherwise he seemed quite normal. If I had not known Parkins so well personally and professionally, I might have considered myself the victim of a joke.

"Professor Parkins sent you to see me?" I asked.

He looked surprised. "Why, no. I talked with a gentleman of that name three or four weeks ago, but we discussed—other things."

"I see. And now you wish to be a salesman."

He jumped to his feet. "I *am* a salesman," he said firmly. And he

started in. Never have I witnessed such an amazing performance. He handled himself with the skill of a trained elocutionist. He spoke eloquently, and he was brilliantly persuasive. Had it not been for his odd manner of speaking, and his frequent use of strange words, I might have been carried away. Much of his discourse concerned his skill and experience in selling automobiles, which I later found to be an obsolete type of conveyance.

It was wonderful, and it was also pitiful. I heard him out to the end, and shook my head sadly. "Sorry," I said. "I can't use you."

"Why not?" he demanded.

Salesman qualifications were then the most carefully guarded secret in the business world. I couldn't give him a direct answer, but I felt obligated to tell him something. "Have you applied at any other sales corporation?" I asked him.

"Hell, yes! This is the twenty-third, and I have six to go. I started in by going around to the manufacturers. No go. None of them have any salesmen. The Cadroviet Air Car Company in New Detroit offered me any one of five different jobs, but it wouldn't hire me as a salesman. Told me it's been a hundred and fifty years since they used their own salesmen. All selling is done by sales corporations. All right. I came to New York, and I started calling on the sales corporations. They all told me the same thing. 'Young man, to be a salesman, you must first be able to sell yourself.' That's sensible, so I rented a recorder, and last night I was up most of the night working

on a sales talk to sell myself. You just heard it. I think it's good. Damn it! I *know* it's good. But I still get the same story. Sell yourself. At my last stop, a fat old geezer leered at me, and said, 'Make me hire you. I dare you!'"

I chuckled. "That would be Barlow, of Sales, Unlimited."

"Look. I *know* I can sell. All I want is a chance. You can hire me on a commission basis, and it won't cost you a thing if I don't deliver. What's wrong with that? Am I poison, or something?"

"Professor Parkins wrote to me about you," I said. "He thinks you were transferred somehow from the twentieth century."

He gestured disgustedly. "I'm not admitting anything. I spent enough time in that hospital."

"I understand," I said. "But even if you were a good salesman in—well, somewhere else—I'm afraid you'll have to find some other way to make a living. I'd advise you to take one of these jobs at Cadrovat. As a salesman, you'd starve to death."

"All I want is a chance," he snapped. "I know what I can do. I can sell anything."

"To everyone?" I said.

"What do you mean?"

I thought for a moment, and got to my feet. "Because of your—shall we say unusual background—I'm going to make an exception and show you what is required of our salesmen. Follow me, please."

I took him into the records room, and pulled a file at random. "Here's last week's record of one of our men. He's a below-average sales-

man, but he's improving. You can see that he made a hundred and seven calls—that's about twenty-one a day. He made two hundred and forty sales, of which twenty-two were majors—sales amounting to two thousand dollars or more."

"Didn't anyone say no?" Jackson exclaimed.

"Of course not," I said. "We have no use for a salesman to whom people can say no. Now, I don't know what your sales record may have been back in the—elsewhere—but unless you can do almost as well as this, no sales corporation could afford to waste time with you. And you couldn't afford to waste your time. This salesman is making a living, though not a very good one. He'll get better, of course. He'll have to."

"I see," Jackson said, but it was obvious that he didn't see at all. Suddenly he looked terribly weary—crushed.

"Better go back to Cadrovat," I told him. "They're a good company, and they must think you have ability, or they wouldn't have offered you your choice of five jobs."

"They gave me aptitude tests for two days. But I'm a salesman. I wouldn't be happy sitting behind a desk, or riding herd on an assembly line. I'll have to think this over, I guess."

"You have to eat, man! You'll have to work at something."

"I know. Well—this morning I ran into a fellow I met in New Detroit. Erf Zedden. He's a space bug, and he thinks he can get me a job on a Mars-Callisto ore freight-

er. Right now, that sounds pretty good."

"That's no place for a man with ability," I said.

"I suppose not, but I feel like getting away from things. I think I'll take him up on it."

I talked with him for a few minutes, trying to cheer him up, but without much success. Then he thanked me, and left. It was two years before I saw him again.

#### 4. ERF ZEDDEN

**I** RUN INTO this Mark Jackson again in New York, and he looks miserable. In fact, he looks like he is about to go down and jump in the river. My money is running out, and he tells me the money he got from selling some of his stuff to a museum is running out, too, and I say, "What the hell! I'm going back to Mars in a couple of days. Come along, and I'll get you a job. The Mars-Callisto run is an easy one, the pay is good, and when you're too old to push the ore they retire you on a good pension. What can you lose?"

He says he'll think it over, but he has a few more people he wants to see. And later that day he comes to my hotel, and says, "When do we leave?" So we're off for Mars.

Believe me, this Jackson is a good man. Two months on the job, and he's my boss. And at the end of a year he's running the whole show on the Callisto end, and the Jovian Mining Company calls me into the Martian Office and gives me a bonus for bringing them such a good man. Never saw a fellow go

up so fast, but somehow he doesn't seem happy about it. No matter how high he goes, though, we're still good friends, and whenever I hit Callisto I stay with him.

So it's natural when I start talking about a leave on Earth he thinks he could use a vacation himself, after two years, and we make arrangements to go together and do the old planet up good.

I get to Earth first, because he insists on stopping off for a tourist's tour of the moon. I say, "What's so special about Earth's moon? And when you're on Earth you can look up and see the damned thing any old night." But no, he has to stop off on the moon.

So I get to Stellar City a day ahead of him, and get us a room at the Martian Hotel. The next morning I leave a note for him to meet me at the Rocket Club, and go out to line up a couple of girls. And that's the day things really start jumping on Earth.

These girls I get are some characters—tall, hefty creatures, with capes so transparent they might as well not wear any. They have their hair piled up in one of these odd Venusian hair styles, and they look like they're nuclear propelled, and I think this is one leave that's going to be worth remembering.

We sit around having a few drinks, and after while Jackson comes in, and we start back up Pluto Boulevard towards the hotel. And all of a sudden this mob comes charging down on us.

As I said, this is the day things start jumping on Earth. We back up against a building as the mob

tears past, and we get a quick look at the chalky face of the man they're chasing. He's running for his life, and the mob is the most hate-twisted bunch of murderers I've ever seen.

"Good riddance," one of the girls says. "Let's watch them finish him off."

Jackson lets out a yelp. "Hey! What's this all about?"

The mob gallops past, and I manage to hail an air cab, and we climb aboard and drift along with the small fleet that's hovering above to watch the show.

"Why are they chasing him?" Jackson says.

"He's a hypno," I tell him.

He's a pretty good hypnotist, and he makes it a good show. He glances over his shoulder, now and then, and freezes two or three of the mob. But the others just bowl them over and trample on them, and keep on going. Off in the distance I spot some air patrol units coming in at top speed, and I wonder if they'll make it in time.

They don't, of course. The hypno runs as long as he can, and then he turns to face the mob. Maybe he's good, but even a Grade I hypno wouldn't have stood a chance. They climb all over him, and knives flash, and they cut him to pieces.

The mob has scattered by the time the patrols land, and there's nothing left for them to do but clean up the mess.

The cab drops us at the hotel. The girls still squealing excitedly, and Jackson looks sick. We go up to our room, and he drops into a

chair and takes a good gulp of Martian Gin out of a bottle.

"Why?" he says.

"Why what?" one of the girls says.

"Why did they murder that fellow?"

We stare at him. "Haven't you heard?" I say.

"I haven't heard anything. I just got in from the moon a couple of hours ago—remember?"

I go over and drop a coin in the visiscope, and we settle down to watch. Paris. Six hundred hypnotists murdered, and the total rising. Shots of mobs chasing hypnos. Applause and snickers from the girls. London. More than two hundred hypnos murdered. Uncontrolled mobs chasing about the streets. The International Institute of Hypnology burning brightly. New York. Martial Law declared. No estimate of casualties available. And so it goes.

"The congressional committee released its report this morning," one of the girls says. "Millions of hypnotists on Earth, and eighty-five per cent of them are salesmen. Every time you turn around, one sells you something, and you wonder why you bought it until the next one sells you something. I came here from Venus three months ago. Know how many air cars I've got? Three. I haven't even got use for one, but I've got three. Bought the last one a week ago, along with a two-year lease on a garage a mile and a half from my apartment. Did I trade in one of the two I already have? No. So I keep asking myself, 'Why?

Why do such a stupid thing?" Then this report comes out this morning, and I know. Everyone else knows. Hypnos sold them to me. I've got two food synthesizers in my apartment. One of them will feed ten people, and I live by myself—most of the time, anyway. Lousy hypnos. I've got four watches, and enough clothes to last me for ten years. I've got a visiscope in every room. I've got so much junk in the place I can't get in and out. I came to Earth with plenty of money, and after three months it's all gone and I'll be paying for this stuff for the next twenty years. Hypnos!" She hisses like one of them snakes I see in a zoo the last time I'm on Earth.

"My sister has three carpets on the floor," the other girl says. "Expensive carpets, one right on top of the other. She would have had a rough time with her husband, if he hadn't bought four air cars."

We turn back to the visiscope. The crisis is planet-wide, and from Moscow to Honolulu hypnos are being chased through the streets or smoked out of their homes.

"I'll tell you one thing," one of the girls says. "When this is over with, the hypnos—if there are any left—won't be selling anything. If the government won't put a stop to it, we'll have ourselves a new government."

All of a sudden I notice Jackson has an odd look in his eyes. He slaps his hands together, kisses both of the girls, and pounds me on the back. "And I'll have myself a job as a salesman," he says. "Drink, anyone?"

The next morning we throw out the girls, and take a rocket to New York. The girls aren't happy about it. They're looking forward to a month, maybe, with well-charged and well-heeled space men, but we throw them out. And all the way to New York Jackson keeps his nose in newspapers, reading about the riots.

I do some reading myself, and I don't see anything very exciting about that congressional report. It just says that hypnos make up a bigger hunk of the population than they'd thought, and it gives a breakdown of the occupations of hypnos: two per cent politicians, eight per cent working in some branch of medicine, three per cent criminals, two per cent in various odd jobs, and eighty-five per cent salesmen.

This doesn't mean much to us space bugs. Our credit isn't worth much, and salesmen never bother us. But the rest of the population is in debt up to its ears from buying, buying—things it doesn't need and can't afford. When the report comes out, people start putting two and two together, and they don't like the answer. Neither do the hypnotists, salesmen or otherwise.

In New York, Jackson drags me along with him to a fancy office building. I see *Terra Sales Corporation* over the door just as we go in, and inside everything is a mess. Police guards, men replacing broken windows, men sweeping debris in the big lobby, and all the employees looking like a rich uncle has just died intestate.

Jackson seems real happy about

everything, and he talks his way past the guards and the secretaries, and we end up in the office of a man named Stephens. He seems like a nice old man, but he also seems like he doesn't much care to talk to us, or anyone else.

"Oh, yes," Stephens says. "I remember. The man from—how are you getting along?"

Jackson pulls up a couple of chairs, and we sit down, and Jackson leans across the desk just like it belongs to him instead of this Stephens. After seeing him operate on Callisto, I wonder if maybe he's going to take over this place.

"I understand, now, why you wouldn't hire me," Jackson says.

"I suppose you do," Stephens says. "Of course all of our salesmen were hypnotists. Have been as long as I've been with the firm."

"And if a man couldn't hypnotize you into hiring him, you turned him down."

"Naturally. I have more than a normal resistance to hypnotism, and if a man can hypnotize me, I know he's good. Of course, we wouldn't hire just *any* hypnotist but he . . ."

"According to this morning's papers, the government will take action before the day is out—and you won't be hiring any hypnotists at all. So I want a job."

"The answer is still no," Stephens says.

I can see Jackson getting mad. "If hypnotists can't sell, you'll have to hire someone else, or go out of business."

"We had a policy meeting this morning, and the General Council

of Sales Companies also had a meeting. We've agreed to go out of business, if it comes to that." He grins at us, but he doesn't look particularly happy. "The restriction can't last more than a month. It'll result in an unimaginable business slump, and then we'll be able to put the hypnotists back to work. Our economy can't function without them. There's no other way to make the population consume our enormous output of material goods. So I'm sorry, but the recommendation I gave you two years ago still stands. Find something else to do."

"I think you're a little out of touch with the situation," Jackson says. "I'll wait around for awhile, and see you later."

Stephens told him he'd be wasting his time.

"What happens now?" I say, when we get outside the building.

"We contact the Jovian Mining Company, and arrange for an indefinite leave of absence," Jackson says. "Then we get jobs—something in the government service, I think, where this slump won't hit us. And we wait. I'm going to get a job as a salesman. Maybe I'll even make a salesman out of you!"

I don't think much of that idea, but I like the fellow, so I go along with him. We don't have any trouble about a leave of absence. I've been with the company eighteen years, and I have a lot of accumulated leave time. And Jackson is a good man, and they want him back. So we get jobs with the postal service, and wait to see what will happen.

AT THE TIME Mark Jackson came to see me, we actually thought we could ride out the trouble and get our hypnotists back to work. The slump developed rapidly. Our economy changed over night from one in which everyone bought everything to one in which no one bought anything. Ten million workers were unemployed by the second week, and they happily settled down to collect their unemployment checks, make grudging payments on the things they'd already bought, and try to save a little money. The number of unemployed continued to rise daily.

By the third month the economy was in a catastrophic condition, and congress still refused to consider repealing its anti-hypno laws. One congressman attempted to introduce new legislation, and withdrew it the next day when his constituents started circulating recall petitions.

We broke down, then, and started hiring non-hypnos as salesmen. I made an effort to locate Jackson, but he hadn't left an address, and the mining company he'd been working for knew nothing about him except that he'd requested a leave of absence.

In the middle of the fourth month, Jackson came to see me again.

"I see that you're hiring non-hypnos," he said.

"Yes," I admitted. "How did you know?"

"One tried to sell me an air car today. Most miserable performance

I've ever seen. He stopped me on the street, and hemmed and hawed, and finally said, 'I suppose you wouldn't want to buy a new air car.' I said no, and he thanked me kindly and walked away."

He laughed uproariously, and there wasn't much that I could say.

"And look here," he said, and waved a newspaper under my nose.

There was a small box set in the center of the first page. The first line ordered me to look at my shoes. I didn't, and read on. "Looking shabby? Worn out? Buy a glimmering new pair of EX-CONS!"

"What the devil is that?" I said.

"Advertisement. First twenty-fourth century advertisement I've ever seen. Not bad, either, for an infant profession. Hell of a lot better than that salesman did."

I pulled out the sales chart for the past four weeks, and shoved it across my desk. Jackson stared at it. "No sales?"

"Not one. We've had a thousand non-hypnos out selling, and they haven't made one sale. People are so delighted to be able to say no that they just aren't buying anything. Think you could do something about that?"

"Your darned right I could!"

I looked at him carefully. "I can concede that in a society where there was no hypnotic selling the salesmen would necessarily develop highly specialized and efficient techniques. I'm not convinced that those techniques would be successful in a society where all

selling has been hypnotic, but I'm happy to give you a chance to show me. Let's go down to the warehouse, and you can pick out anything you want to sell."

He grinned. "I've been waiting over two years for this. Let's go!"

We went to the warehouse, and Jackson selected a stunning household ornament—a miniature portable fountain which contained its own power supply and furnished a dazzling display of colors at the touch of a button. I explained the use of our order forms, and he asked for a pocket recorder to take along with him.

"Do you mind if I watch you work?" I said.

I think the idea pleased him. He spent some time selecting an apartment building, and when he'd made up his mind, I asked him why that particular one.

"Government workers," he said. "They're still employed, but they're not in such a high income class that the doors have viewing screens. If you want to sell to a housewife, you have to be able to get your foot in the door."

He started with the first apartment, and met the housewife with a sweeping bow. "We're making a Consumer Survey," he said. "May we come in?"

I don't know which of us was the more astonished, myself, or that plump housewife. She backed away dumbly, and allowed us to enter.

I stood by the door, and he circled around the living room studying the drapes, and checking on the furniture, while the house-

wife trailed along behind him.

"Rather cramped for space, aren't you?" Jackson said.

"Why, no . . ." she stammered.

"This color scheme clashes badly. Did you select it yourself?"

"I . . ."

"And the furniture arrangement. All wrong. No, I'm sorry, but I'm afraid you can't qualify."

"Qualify for what?" she said.

Jackson pulled the fountain out of a satchel. He set it on the table and touched the button, and the room sparkled with color. I looked at the childish delight in that housewife's face, and thought, "Damned if he isn't going to do it!" And the next moment he completely dumbfounded me.

"I've been authorized to place a limited number of these wonderful fountains in deserving homes," he said. "But as I told you, yours can't qualify. Sorry."

He turned off the fountain, stuck it back in the satchel, and started for the door.

I've rarely seen a woman get so angry. Face flushed, arms waving, she planted herself in the doorway, and refused to let him go. They argued for a few minutes, and finally he relented and allowed her to sign an order form.

There were sixty-two apartments in that building, and Jackson sold sixty-two fountains without varying his technique by one syllable. Then he handed me the order forms.

"I'm tired," he said. "I think I'll call it a day."

I was tired, and I was also speechless. I thought, "Is that how they sold things in the twentieth

century? By insulting the customer and trying to keep him from buying?" I went home myself, and went to bed early.

And Jackson called me out of bed at ten o'clock. "Better come down to Police Central," he said. "I'm under arrest."

It took me a moment to collect my thoughts, and I finally managed to ask him what he'd done.

"Hypnotic selling," he said. "Twenty-one husbands are down here complaining that I hypnotized their wives into buying those fountains. And they keep coming in. They tell me the maximum penalty is life imprisonment. I'm surprised it isn't death."

At that moment I had a flicker of doubt—his odd performances, and the peculiar reactions of those women, I suppose. "Jackson," I said, "you didn't by chance hypnotize those women, did you?"

"Certainly not!" he bellowed.

"I'll be right down," I said.

I contacted the firm's legal advisor, and we went down together.

Police Central was in an uproar. There were more than forty complaining husbands by the time we got there, and they kept coming in. Some had their wives along. The men ranted angrily. The women confessed that Jackson hadn't sold them anything. In fact, he'd tried not to sell them. They'd bought because they wanted the fountain. They still wanted it. The police contacted Central Records, and found Jackson wasn't listed as a hypnotist. Jackson produced his pocket recorder, and played back a few of those sales interviews. A

hastily summoned psychiatrist heard the evidence, and declared that it was shrewd psychology, but not obviously an example of hypnotic selling. Reporters gleefully took notes and photographs and interviewed the women. And of course Jackson was released.

The next morning his photo was on the visiscope, and the front page of every newspaper. "Master Salesman," the caption read. Jackson stormed into my office and angrily slammed down a paper.

"We've got to put a stop to this!"

"You're news," I told him. "Except for absolute necessities, that's the first time anyone has bought anything for months—*on the entire planet!* We can't keep the papers from talking about that."

He shook his head. "I don't like it, but—coming along today?"

He went down to the warehouse and took his own photos of the latest model air car, and we went off to prow around a government parking lot. A somewhat battered vehicle came gliding in, and Jackson stopped the driver—a portly, important-looking government official.

"This your car?" Jackson said.

"Yes. Say—where have I seen you before?"

Jackson scowled. "Couldn't say. I'm a little surprised to see a man in your position flying a beat-up job like that. Now look at that car over there." He pointed to a shining model that obviously had been purchased just before the riots. "People judge a man by the car he flies. I'll bet that man's neighbors think he's *somebody*."

The man's face modulated through several stages of perplexity. "Never thought of that," he said. "Kids really wear out a car in a hurry. I've got five teen-agers, and they have every one of my five air cars in a mess."

"That's easily solved," Jackson said. "Get a new car, and keep it for yourself. When it starts looking shabby, you can give it to the kids, and get another one." He gestured at the other car. "Really beautiful, isn't it?"

"It certainly is," the man admitted.

Suddenly Jackson had an order form in his hand. "Sign here," he said, "and I'll have a better one delivered to you this afternoon."

The man signed. I watched Jackson sell seven air cars, and then I had to go back to my office. He came in early in the afternoon, with thirty-nine signed orders.

Thirty-nine majors! No hypno-salesman had ever been able to extend control over that many men in one day who qualified for major sales in spite of credit restrictions and prior purchase commitments. "Amazing," I said. "You're certain you don't have some latent hypnotic ability?"

"If I did, I wouldn't be a salesman," he said. "Where's the pleasure in selling if the customer can't say no?"

"All right. I'm convinced. I want you to start right away training salesmen."

"No," he said. "I need to do some more experimenting. There's something about all this that bothers me."

"What could be wrong? You're selling, you're making an excellent record. Isn't that what you wanted to do?"

"The people are too naive," he said. "They don't say no. And a lot of them should, with the childish approaches I'm using. Tomorrow I'm going back to selling fountains."

Jackson was in the news again the next morning, along with interviews with men who'd bought air cars. Some of them were chagrined, and some of them thought it was a good joke. One or two thought they needed a new air car. All of them had their reactions to Jackson's selling technique publicized on page one.

"I wish they'd quit that," Jackson said.

"They won't. You're news, and even the people that buy from you are news. Evidently they enjoy that. Might as well get used to it."

We went out again with the fountain. The first housewife met us at the door, stared, and squealed with delight.

"You're the salesman!" she said. "I saw your picture. Do come in!"

Jackson looked at me, shrugged, and followed her into the living room. She hovered around him excitedly. "I read all about it. Do it to me, just like you did to all those other women."

Jackson glanced about the room. "No. I'm sorry. I'm afraid you can't qualify . . ."

She shrieked with laughter. "That's it!" she giggled. "That's exactly it. I read all about it. Do it some more!"

"Your living room is much too small."

Another giggle. "That's it!"

"The color scheme clashes badly."

"That's it!"

He placed the fountain on the table. "It's a beautiful ornament, but I'm afraid you can't qualify."

"That's all right," she said. "My husband wouldn't want me to buy it. But thank you ever so much for showing it to me."

And we were back in the hallway, both of us thoroughly unnerved. We had ten more sessions with fascinated, giggling housewives before Jackson gave up and went home. He sold no fountains.

The next morning he went out to sell air cars, and he was back before noon—with no orders.

"They slap me on the back," he said. "They buy me drinks. I had more free drinks this morning than in any six months I can remember. They take me around and introduce me to their friends. And when I try to point their thinking towards a sale, they laugh in my face, and say, 'So you're the salesman! Sell me something!'"

"The publicity," I said.

"Yes. I'll have to think of something new."

He did. The next day he was sensational. The following day he failed to make a single sale. As the days went by, that pattern was repeated over and over. He would try out a new approach, and enjoy phenomenal success. Invariably one of his customers would delightedly contact a reporter, and the next morning all of the details

would be revealed to the reading and listening public. And that particular approach never worked again.

"I think I understand it," he said finally. "If I can catch this twenty-fourth century customer unawares, he's incredibly naive. He can't say no. But if he's forewarned, he has a terrific sales resistance. If we could only get rid of the publicity . . ."

"We can't," I said. "The question is, could you teach other salesmen to come up with something new every day?"

"No. In time, some of them could. But it takes native ability, and lots of selling experience. All I could do at the start would be to teach them an approach I've tested myself."

"But once you've tested it, it won't work again."

"That seems to be true."

"Then I'm afraid we're beaten. One man can't stop an economic slump all by himself."

Jackson got to his feet wearily. "There must be some way to lick the problem. And if anyone can find it, it'll be me."

But he didn't find it. He worked incessantly, and he grew increasingly irritable. He seemed to be wearing himself away, day by day, and finally I made him take a week's rest.

And during that week congress took courage and acted. It drew up a detailed code of what could be sold to whom, and how much, and let the hypnos go back to work. When Jackson returned, the economic slump was on its way out, and—much as I regretted it—so

LLOYD BIGGLE, JR.

was Jackson.

"You can have your job back, and carry on any way you like," I told him. "I appreciate what you tried to do. No one denies that your performance was remarkable. All the same, you'd have a bad time competing with hypnos."

He took it amazingly well. "I know I would," he said grimly. "But I still think I can lick the problem. I'll keep working on it. And I promise you—I'll be back."

I never expected to see him again.

## 6. ERF ZEDDEN

**J**ACKSON gives me a pretty bad time while he's being a salesman, and it gets worse by the day. He climbs all over me if the least little thing goes wrong around the apartment, and he sits up most of the night figuring out ways to sell things. I think the fellow is killing himself, and I'm damned glad when his boss makes him take a week off. We go to one of those luxury hotels on the moon for the whole week, and though I hate the place, I don't say anything, because I figure he needs the rest.

And then on the day we get back he goes down to the sales company, and comes back a little later to tell me the whole thing is off. We're going back to Mars. I consider this the first good news since we hit Earth.

The Jovian Mining Company is glad to have us back—him, anyway. They make him take a demotion for being away so long, but in no time at all he's back where

he was, and he keeps going up. It takes him just five years to work all the way up to President.

So we go to live on Mars, and I get a promotion and a raise in salary to be his right-hand man, as he calls it, though I don't do anything but run errands for him. And I can see he isn't happy, no matter how high he goes. He wants to be a salesman, and he's convinced himself he's going back, some day, and show all those hypnos how it's done. He paces the floor with that odd look in his eyes. He sits up late at night thinking out ways to sell things, and making up sales talks, and planning what he calls sales promotions.

He practices his sales talks on me, and I keep telling him they're good, though after I hear the first one they all sound alike.

Things go on that way for a couple of years, and I'm getting worried about Jackson's health, and all of a sudden a crisis develops in the Jovian Mining Company. The mines on Callisto start paying out.

Now the company expects this for the last fifty years, and new operations are underway on Ganymede and Europa and Io long before I first hit space, and the company makes maybe ten million per cent profit on its Callisto operations, and nobody feels bad about pulling out.

Nobody but Jackson. *He* thinks it's a crisis, and he drags me off to a directors' meeting.

"It's a scandalous waste," he says. "We have six good-sized towns on Callisto, and the cost of salvaging that fused plastic would

be terrific."

"Don't give it a thought," they tell him. "If it costs too much to salvage, just forget it."

"It isn't good business to forget about an investment of that size."

"My dear fellow," they say. "Our investment on Callisto was amortized a hundred years ago. The company never thought the mines would hold up this long. It's excellent business to forget about it."

Jackson shakes his head, and I see that odd look in his eyes. "Callisto is the sole property of the Jovian Mining Company," he says. "If it's no longer of use to us, I'm asking the board of directors for permission to sell it."

There's about two minutes of silence, followed by the wildest laughter I've heard since the anti-hypno riots. Those old men just lean back and laugh themselves silly. Sell Callisto? Why not sell Mars? Or Earth?

Jackson just sits there calmly, and when they quiet down, he puts it in the form of a resolution, Callisto to be sold, if possible, with the company retaining all mineral rights. The directors can't see anything wrong with the idea, except that it isn't possible, and Jackson gets unanimous approval. The next morning we leave for Earth.

Jackson spends a few days in the New York Library, where he fills a ledger with notes and statistics, and it takes him a week to get these organized. Then we call on a Mr. Whaley, who is president of a large travel bureau.

"I understand you people have had a tough time since that legis-

lation on hypnotic selling went into effect," Jackson says.

This Mr. Whaley is glad to have a shoulder to cry on, and he tells us all his troubles. Before the anti-hypno riots he has hypno salesmen out selling travel tours to people who don't want to take them. A lot of people don't even want them after they buy them, so they don't use the tickets, which adds up to nice slices of pure profit for the travel agency. After the riots, the government puts a stop to this.

"Ever since then, you've been looking for an attraction to make people want to travel," Jackson says.

"We have," Whaley admits.

"And right now, you're thinking of building a luxury Honeymoon Hotel on the moon."

"We *were* thinking about it," Whaley says, "but it would be too expensive to build. We'd have to charge rates that young couples couldn't afford."

"I have an answer to your problem," Jackson says. "Take your honeymooners to Callisto, where excellent accommodations are already built. You'd have to make a few alterations, but the expense would be minor."

"Wouldn't work," Whaley says. "It's too far. Most of the honeymoons would have to be over before the young people could get there."

"I believe I have some statistics that would interest you," Jackson says, and he hauls out his ledger.

He tosses statistics at Whaley for twenty minutes. He shows him that ninety per cent of the immigrants

to Mars are young and unmarried, and what the Martian marriage rate is. He shows him how much money the government is spending to interest the citizens of Earth in settling elsewhere in the solar system, and how the government would joyfully furnish subsidies for a Callisto honeymoon fleet equipped with fast military drives. "With the high marriage rate on Mars, and government assistance on transport from Earth, you'll operate at full capacity from the start," he says. "And what's more, you'll have something to sell. Something that will interest and excite people."

"Think of the slogans you can use," Jackson says. "Honeymoon among the moons—the twelve moons of Jupiter. Honeymoon under Jupiter, the biggest moon in the universe. Man, it's a natural!"

Whaley shakes the dreamy look out of his eyes, and says, "Just what are you trying to sell?"

"Callisto," Jackson says.

Whaley shakes his head. "We aren't big enough. No travel agency is big enough."

"All the agencies together are big enough," Jackson says. "And you can all profit. This is a plan to create business."

"I have no authority," Whaley says. "I'd have to take it up with the council."

"Just introduce me," Jackson says, "and I'll take it up with the council."

It ends, of course, with his selling Callisto. For a few days we're overrun with reporters, and Jackson gets in all the papers. MASTER

SALESMAN SELLS THE MOON—that sort of thing. The directors of the Jovian Mining Company send Jackson a bonus and a chunk of stock, and tell him as long as he's already on Earth, to take a vacation. I'm afraid Jackson will get ideas about being a salesman again, but he doesn't. He just takes a vacation.

Then one day this man Stephens, of Terra Sales Corporation, invites us to have dinner with him. I think maybe he wants Jackson to come back to work, but no—we just have a good dinner, and Jackson meets his daughter, and from the way they react on each other I think Jackson will be in the market for one of those Callisto honeymoons.

"I see you've solved your problem," Stephens says.

"Yes," Jackson says. "I've solved it. If my sales presentations won't work more than once, why—all I have to do is sell something that only needs to be sold once."

At the time I don't understand this, but right now I'm giving it some thought. Jackson marries the Stephens girl, and brings her back to Mars. He settles down to raise a big family and increase the profits of the Jovian Mining Company. He's a cinch to be the next chairman of the board, which is a neat achievement for a young man, but I can see he's not satisfied with himself.

And lately I see that odd look in his eyes, and I know he's figuring out a way to sell something.

So help me, I think it's Jupiter.

E N D

*Theory said that the race would adapt to radiation*

*But when a man had taken as many risks as he had . . .*



*Illustrated by Paul Orban*

BY DAN GALOUYE

**T**HE FRENZIED bustle of Sector Headquarters hit Coordinator Vance McCune like a stifling blast as he stepped reluctantly into the arena-like control room.

He paused and wearily scanned the bulky correlator machines, the clerks and technicians scurrying about like distressed ants, the video-communication operators, the endless procession of control crewmen and survey-detection personnel.

A ripple of poised motionlessness swept across the room as they discovered his presence. The delayed reaction was somewhat like an assault wave.

"Old Man's called a board meeting Thursday at the Secretariat."

"Crew Forty-Eight needs more shields south of Denver. Can I shift the plates from Flagstaff?"

"The Central Russian Sector wants us to run a high altitude current check."

"Commissioner Carmath wants a spot run down."

"Here's that oceanographic report . . ."

Before McCune reached his desk, he had taken in tow a scampering retinue of more than a dozen—all clamoring for preferential attention.

## SHUFFLE BOARD

The Coordinator was a tall, rangy man with sagging, despondent lines in his face. If his hair seemed sparse and unkempt, it wasn't due as much to carelessness as to resignation to the inevitable.

He calmly held up his hands and quieted the restless mob. The job, he had learned, demanded a certain amount of forced detachment; otherwise it would be insufferable.

"One at a time," he admonished. "What's the latest on the tote board, Woolcut?"

The Detection Supervisor indicated the items with a stabbing finger. "Four new spots ranging from lukewarm to damned hot. One—an East Seattle area—might call for partial evacuation."

"All in our Sector?"

"Three are. One overlaps the Western Canadian area."

"What's the trouble?"

Woolcut made a demonstrative gesture of wiping his blunt

brow. "A front's sweeping down the coast with a trace of warm rain. Not too much—it'll probably add only about a twentieth of a roentgen to the average exposure badge. But there'll be more if we don't cap the source."

McCune dropped into his chair and began thumbing through a sheaf of reports. "Where do you figure it's coming from?"

"Probably a mid-arctic disposal dump used by an early Alaskan reactor."

"One of those outfits with records that don't go back more than a hundred years, I suppose," the Coordinator offered dismally.

Woolcut's nod was commiserating. "When we track it down we'll probably find an exposed pile of light garbage. My guess would be selenium 79, with a half-life of six hundred thousand years."

"Send up all the crews we can spare."

McCune turned to the second in line. It was going to be another "just dandy" day—as they all had been in the eight years since he had taken over the Western U.S. Sector.

Somehow it all struck him as being a paradox—a monotony of newness. The scores of detection and control problems that surged to the surface every day were all different. But the differences merely added up to the ennui of an eternal job that had to be done by the Radioactivity Control Commission (or Shuffle Board, as it was facetiously known) if great-grandson was to be of the same genetic stock as great-grandpop.

But today, he reminded himself with a grim sense of desperation, *would* be different . . . Beth had gone to the hospital. The thought and his inescapable reaction of self-abasement were like a cold sweat steaming deep under his tanned skin.

The first avalanche of details attended to, McCune settled back in his chair and loosened his collar. He lit a cigarette and took a deep, exhilarating draught. But his respite was short-lived as the Detection Supervisor elbowed his way through the scurrying workers.

"Here's the latest on the Hawaiian Subsector," Woolcut offered in strained tones. "Geology's recorded another fault shift during the night. They're working out a probability table on whether Haleakala's going to blow."

"How much proactinium has been dumped in that crater to date?"

Woolcut gestured uncertainly. "We've only got a rough estimate from the eight reactor companies on the islands—something like seventy-two thousand tons."

The Coordinator winced. "Damned fools! They were warned fifty years ago not to use that hole on Maui as a disposal site. Just because a volcano hasn't acted up since 1750 doesn't mean it won't ever bust loose again. What's three hundred and twenty-five years in the life of a volcano?"

The other shrugged noncommittally. "It'll sure raise hell if it starts blowing now. I hate to think

of evacuating five hundred thousand people on that island."

"Or maybe six million on the whole chain." McCune dismissed him and motioned for his Control Supervisor.

"What sort of standby complement do we have on Maui?" he asked.

"Three complete shuffle crews," Fordham disclosed.

"Any suggestions on what we can do with all that hot Pa<sup>231</sup>?"

Fordham spread his hands helplessly. "The only safe place I could find was Diamondhead Crater on Oahu."

McCune looked up sharply. "But that's right in Honolulu—under the noses of over a million people!"

"I know. But it's the best we can arrange on a temporary basis. We'll line the crater and cap it, of course."

McCune leaned back in solicitous thought . . . It was an endless game. After the emergency was over, public reaction would demand that the stuff be taken out of Diamondhead and dumped elsewhere. But the new disposal site would probably leak contamination into the environment and some harassed shuffle crew ten years hence would have to gather it up and find another place for it. And all the while the accumulation of reactor waste would continue inexorably.

"Who's in charge of the Maui operation?"

Fordham grimaced apologetically. "Nobody. 'We're fresh out of supervisory personnel, what with the Denver and Seattle deals and

the New Mexico—"

McCune swore disgustedly. Then his blunt fingers drummed the desk meditatively.

"I know what you're thinking, Chief," the other broke in with concern. "Don't try it. If the Commissioner finds out he'll dump you off the board. It'll mean your job."

"It won't be the first time I had to supervise a UN shuffle detail."

"It won't even be the first time this month. But, hell—six years ago you were four times over your maximum allowable roentgen level. I'll bet you've absorbed eight hundred R's in the fifteen years you've been with the Commission."

"Two or three more won't hurt," McCune offered laconically. "Won't even show up on my badge —if I can arrange another switch."

He glanced down at the black square clipped to his lapel. Then he looked over at the rack where Miss Jarred's badge was visible against the light material of her coat . . . Someday his secretary would begin wondering where she was picking up so much radiation. Briefly, he considered how she might react when the inspectors told her she was rapidly moving out of the "genetically safe" range.

Fordham went off frowning disdainfully. "It may be all right for you, since you don't expect to raise a family," he mumbled over his shoulder. "But I'm keeping my level down. I've got two fine kids. And I'm going to make damned sure the third will be normal too."

This brought McCune's thoughts back to the inescapable and, hesitatingly, he dialed the hospital.

He spoke low so the others wouldn't learn Beth *hadn't* been visiting her mother after all.

"No, Mr. McCune," the head maternity nurse assured. "Your wife hasn't left the labor room. We'll call you when she goes into delivery."

"No!" he shouted. Then, more softly, "No—I'll call back."

Numbly, he let the receiver dangle from his hand for a long while . . . He'd never intended having a baby. Beth, however, always had. And, after his carelessness, she had furtively kept her condition to herself until it was too late to do anything about it . . . Damn her!

**I**T WAS mid-morning when Miss Jarred ushered in the reporter from the wire service. The Coordinator recognized Neil Lancer, one of the top spot news men, even before she announced him.

McCune regarded him with a half-venomous look of resignation and reluctantly offered a chair.

Diffidently, the other eased his hat up off his forehead and lit a cigarette. "Office wants me to get your views on those statements by Dr. Puang."

"Who's Dr. Puang?"

"The Pakistanian geneticist." Lancer leaned forward. "Maybe you haven't run across the articles, so I'll brief you. The boys back in the L.A. bureau are anxious for your reaction."

Like hell they were, McCune decided. Lancer wasn't the kind of man they'd send out on a feature assignment . . . They'd gotten wind

of the Hawaiian situation.

"Puang," the newsman said, crossing his legs, "has come out with a treatise on adaptive evolution. He seems to think the human race is inherently equipped to take care of any reasonable change in its environment."

If there was a Puang, McCune felt sure, he would have heard of him. Furthermore, it was obvious from the way the reporter was glancing alertly around the room that he was trying to pick up answers to questions he wasn't going to ask.

"Make it short," the Coordinator snapped. "I'm busy."

"Well, Puang believes humanity will eventually adjust itself to living in a radioactive environment." Lancer abstractedly fingered his radiation-tabulator badge. "He sees adaptive evolution producing a strain that'll withstand increasingly higher levels of radiation without going off the deep end with runaway mutations."

Woolcut pushed up to the desk. "We've located that garbage heap in the arctic!"

"The one causing the hot rain?"

The Detection Supervisor nodded anxiously. "Just as I guessed—selenium. They had it capped under the edge of a glacier on Victoria Island. But erosion exposed the dump and arctic winds are beginning to pick up contamination."

"Good work. Give your data to Fordham. Tell him to set up liaison with the Western Canadian Sector and get the stuff recapped until we figure out what to do with it."

McCune faced the reporter again. "All right, Lancer. Let's bury this Puang guy and call off the play acting. But first I'm going to read you the riot act . . . Section Twenty-One of the Public Panic Law deputizes—"

Lancer moaned dismally, took up the chant, "—deputizes all Shuffle Board members to classify certain data as restricted in the interest of public safety . . . But hell, McCune, give me a break!"

"Under the protective provisions of Section Twenty-One," the Coordinator continued dispassionately, "I'm charging you with the information that a critical situation is making up in the Hawaiian Islands. A dead volcano crater that has been used as a dump for reactor waste is now showing signs of erupting."

One of Woolcut's assistants called over from a desk halfway across the room, "Another R-level increase in the coastal waters off Oregon!"

McCune's shoulders fell dejectedly . . . Punch the ball in on one side and it bulges out the other. You couldn't win; couldn't even get ahead long enough to relax.

The assistant came over. "You suppose it's the Portland reactor cluster?"

"What else? They've been sluicing off Fe<sup>55</sup> solute through the Columbia River into the Pacific. But hunt it down to make sure before we get them on the carpet."

The assistant hesitated.

"Yes?" McCune asked.

"Just wondering what they'll do with the stuff now."

"That's our problem. They'll probably still be able to sluice off half of their garbage. We'll just have to find a place for the other half."

Watching the man return to his desk, McCune let his thoughts drift back through the years to his uncle's farm . . . They'd had a hound dog that used to make a ritual out of burying a bone. It would dig first here; decide it didn't like the spot after all; pick up the bone from the half-excavated hole, and try another location. After four or five false starts, it would finally shuffle the morsel to what it considered an adequate cache.

The RCC was confronted with much the same problem as the hound dog. Only, the adequate place seemed eternally elusive and the shuffling endless.

He remembered the reporter. "All right, Lancer. You're charged with top confidential information. If it gets into print, you and your bureau chief could get up to twenty years."

Disgusted, Lancer strode toward the door, brushing past Woolcut who was on his way to McCune's desk.

The Detection Supervisor's face was drawn and haggard. "Volcanology has confirmed the subterranean rumblings in the vicinity of the Haleakala Crater."

McCune sprang up. "Send out Crews Four, Seven, Thirty-Three, Thirty-Four and Forty-One."

He cupped his hands and shouted over to the communications sec-

tion, "Get Volcanology and find out when we can take our men into the crater.

"Miss Jarred," he tossed at his secretary, "call Supply and have them ship all available shielding material to the Hawaiian Subsector.

"Woolcut—tell Flight Operations to service my ship."

With each shouted order, Coordination Headquarters had seemed to shift into a more agitated tempo of scurrying activity—until now the huge room was a blur of erratic motion.

But, for McCune, there was nothing to do but await the "go ahead" from Volcanology. He couldn't shrug off the sensation of denial and thwarted purpose brought on by the delay. Impatiently, he clawed at the armrests of his chair.

Remembering Beth, however, he jolted erect and grabbed the phone.

"Yes, Mr. McCune," the nurse said indulgently, "she's in delivery now. But it'll be another hour—"

He dropped the receiver back in its cradle . . . He'd been a damned fool too. He should have ensured against anything like this happening. Then he would have avoided the months of worry—months during which they couldn't see a doctor for fear their identity would become known and they'd be turned into objects of public curiosity.

The papers would have liked that. Even now he could visualize the headlines: "Sector Coordinator, Four Times Over Safe Genetic Level, To Have Baby."

Not seeing a doctor until the last minute had been a source of constant apprehension. He was sure Beth had worried as much as he had over the fifty pounds she had gained.

**B**LARING ROCKETS crescendoed to an ear-splitting roar and died off abruptly, like a reverberating peal of thunder. The craft, a mile over Los Angeles Headquarters of the Western RCC Sector, shifted to its rotor and McCune listened to the fluttering grumble of the blades as it cushioned to a landing on the apron outside.

Commissioner Carmath, formidably stocky and bristling with a bearing of intense purpose, pushed his way toward the main building.

McCune met him at the entrance and was promptly brushed aside as the Chief of the UN Radioactivity Control Commission plowed a furrow through the scampering workers and drew up before the main tote board.

"This Hawaiian thing—that the only emergency situation you got working?" he demanded.

"The only one of any consequence. We've got twenty-six other operations—"

The Commissioner silenced him with an indignant stare. "This thing had better be worked out, McCune," he threatened. "I'm holding you responsible for the whole affair!"

"But they've been dumping in that crater for a whole generation!"

"If you had the merest suspicion

something like this might develop," Carmath went on uncompromisingly, "you should have taken preventive steps."

McCune stiffened with resentment. "Is that the way the Commission feels?"

"That is the considered opinion of every single member of the board except yourself!"

The Coordinator smiled bitterly . . . They hadn't wasted any time in tagging their scapegoat. Well—to hell with the job. Let somebody else shuffle the stuff around for a change. Anyway, if they had run a total on his *actual* accumulated exposure, he would have been pensioned off years ago.

"Let's be reasonable about this, Commissioner," he began nevertheless. "In the past week this Sector has had to control environmental radiation increases in more than a hundred—"

Carmath threw up his hands impulsively and moved toward the door. "I've no time to listen to you complain about routine control measures . . . A ten-thousand square-mile patch of Japanese fishing waters was declared contaminated today because some crackpot Coordinator picked the wrong spot in the Pacific to dump niobium<sup>94</sup> fifteen years ago.

"In France, an entire dairy farming section has to be moved, lock, stock and barrel. Why? — Because the pastures are picking up radiation from God-knows-where—probably in rain from some hidden dump in the Alps."

He stopped and propped his hands on his hips. "You'd think

shuffling americum<sup>241</sup> a hundred miles into the Everglades would be a safe proposition for Miami, wouldn't you? But what happens? —Hot insect life crops up in the area and now we've got one hell of a capping job, if not an all-out shuffling operation!"

Carmath scowled. "And *you* try to tell me about *your* petty problems!"

McCune wished to hell he'd get out. If the okay on the Haleakala Crater shuffle came through while the Commissioner was still around, he might learn there was nobody but McCune to supervise the operation.

Fortunately, the Commission Chief turned and stormed out.

McCune headed for his desk, almost colliding with the Detection Supervisor.

Woolcut flashed a smug smile of satisfaction. "We've finally licked that hot artesian water problem in the Clovis-Tucumcari area."

"Well, don't bother me with it!" McCune rudely waved him off. "Take it to Fordham."

Immediately contrite, though, he gripped the other's arm. "Sorry. The Commissioner crawled all over me . . . What's the deal in New Mexico?"

Woolcut grinned. "An oil well ran dry about seventy-five years ago and someone pumped it full of promethium<sup>145</sup>. That stuff has a short half-life, but not short enough. It finally worked its way into the subterranean water supply."

McCune shrugged hopelessly.

"Then there isn't too much we can do, except padlock the artesian wells and pipe in water from a clear area."

Disconsolately, he returned to his desk . . . Was the world radiation level increasing astronomically? Or did it just seem that way because he was thoroughly tired of working out the day-to-day challenges?

Real or imaginary, he conceded, everything was in one hell of a mess. Civilized humanity had been reduced to four billion radiation-exposure badges with one person attached to each . . . at least, that was the burlesque impression he carried around.

. . . Four billion badges that had to be replaced monthly so the radiation they had absorbed could be measured and the figures entered on a million ledgers. That was the only way tabs could be kept to see that the natural mutation frequency wasn't being knocked out of kilter.

When he looked up, Fordham was standing in front of his desk.

"Volcanology says we'd better start the Haleakala shuffle," the Control Supervisor announced tensely. "They figure we got ten or eleven hours to move the Pa<sup>231</sup> from the crater."

McCune nodded resignedly and glanced over at Miss Jarred's coat. Whistling abstractedly, he rose and strolled to the rack.

His back toward the secretary, he unclipped her badge and pinned it to his lapel, replacing it with his own. With the designation on the reverse side, it was hardly likely she'd notice that the one on her

coat wasn't hers.

Before he left the building, he called the hospital again . . . No, Mrs. McCune hadn't come down from the delivery room yet.

Five minutes later, the Sector Headquarters apron fell away beneath as the blades of his shuttle craft churned the air with a muffled roar. A mile up, he hit the power-shift stud. The rotor retracted and the tubes took over with a furious grip of acceleration.

**W**ITHIN THE hour, Coordinator McCune stood on the jagged rim of the crater, zippering up his plastic envelope and sealing off the seams. The Haleakala shuffle, he wearily acknowledged as he broke open the compressed air valve, was going to be one of the damndest operations he'd ever seen.

Already the emergency crews had set up their equipment along the bowl of the crater. Their positions, behind mobile shields, were as he had assigned them over videocom while en route.

Across the bowl, a steam shovel and a half-dozen bulldozers started down the slope, heading for the piles of Pa<sup>231</sup> that glistened like blue-steel hills in the early morning sun. Beyond, the sky was dense with hovering shuffle craft, waiting to be called for loading.

The crater itself was like a dismal plain of hell, with everything there but the heat . . . No, McCune corrected himself—the heat was there too. Only, it was a kind the traditional hell had never seen.

But curlers of gray smoke streaming from crevices in the bowl's floor were a derisive indication that even fiery heat would soon make the illusion of Hades complete.

"Attention all crews," he directed over the radio as he started down the slope. "Keep the hot stuff in front of your shields. Take the outermost piles first and work in."

The ground rumbled as tractors lumbered in from the rim, hauling empty packing crates. Then there was a softer but more ominous rumble and denser smoke curled from the fissures.

Two bulldozers joined forces with one of the mobile shields and advanced on the nearest piles. The steam shovel and three tractors with packing cases took the cue and clumsily charged in.

"That crew on the left!" McCune shouted, squinting to discern the number on its shield. "Crew Forty-One—your flank's exposed! Either square around or back up."

He started forward again, drawn hypnotically toward the intense activity. But a special instinct of fear and danger held him back. Trapped between the two impulses that were like magnets, he was painfully strained with indecision.

"You there—in Crew Seven," he ordered. "Get back behind your shield . . . Outpost, send in two more shovels . . . Crews Thirty-Three, Sixteen and Two—take the third pile on the left . . . Shuffle Craft Number One—stand by to load."

Apprehensively, he fanned his radiation detector ahead of him.

Its clatter rose to a steady, alarming whine.

It was going to be a disastrous job for the men in the Haleakala shuffle. No longer would it be a matter of fighting for genetic safety. Such a petty consideration, McCune realized, had long been exceeded. For, when you spoke of genetic purity, you were speaking in terms of only forty or fifty roentgens. These men would sop up radiation in the *hundreds* of roentgens. Now it was a fight for physical survival.

Shuffle Craft One plummeted down, drew up sharply and hovered above the crane that was shoveling Pa<sup>231</sup> into the cases.

A thousand frantic voices suddenly shouted a hoarse alarm.

McCune swore desperately as he watched the blast from the craft's rotor buffet the blue-steel hills and scatter pulverized protactinium like dust.

The swirling cloud of gray powder spread over the crater like a pall of death.

"Get that copter out!" the Coordinator bellowed, retreating before the deadly dust. "All crews fall back!"

But the men had already broken and were fleeing in frenzied disorder up the slope.

He drew up as the copter skittered beyond the rim. "Outpost! Call in all shuttle crafts and lay dolly tracks down into the crater. We'll have to cart the stuff out."

Volcanology came in. "We expect a major eruption within eight

hours, Coordinator. You'd better rush it up."

McCune forgot about his plastic encasement and tried to wipe his forehead. He only succeeded in smearing perspiration over the transparent surface so that he could hardly see through it.

"Communications!" he called urgently. "Get out a general alarm. Have all Sectors send Class 1 emergency crews and equipment.

"Supply—break out the double-shielded manipulator suits and mobile platforms; we're going to have to wallow in this damned stuff.

"Civil Control—evacuate Maui and have your forces on the other islands stand by."

He took another reading from his R-detector and estimated the amount of radiation being absorbed by Miss Jarred's badge on his lapel . . . There was *bound* to be an investigation at the end of the month! A civilian turning up with a hundred and nine R's in thirty days' time would raise a stink anywhere. His years of badge switching were sure to be discovered.

The last crews to leave the bowl were straggling past him. Watching them clamber up the slope, pale and haggard, he was thankful now that he had ordered a full Medical Standby complement assigned to the Outpost.

Making doubly sure that the crater was unmanned, he climbed up to the ridge.

A huge red and white shuttle craft roared in from the east, kicking over from rocket power at only a thousand feet above the crater. The blast of its rotor further agi-

tated the hot dust and the Coordinator swore volubly.

"McCune!" came the enraged response. "Is that you down there?"

He winced as he recognized the heavy voice of Commissioner Carmath and noticed the UN-RCC symbol on the craft.

Watching the ship land he numbly peeled off his plastic envelope and, holding it by an inside fold, dropped the thing into a disposal bin.

Carmath stormed over, sweeping the area before him with a counter. "McCune, you're cashiered as of now! I'll take over until another operation supervisor gets here."

The Coordinator shrugged indifferently and started back toward his shuttle craft.

Doggedly, Carmath followed. "I told the Chief Correlator you were pulling something like this. But Ronson said no. He said he investigated and found nothing."

McCune paid no attention. Instead, he grinned as he realized suddenly that the magnets he had fought for nearly half his life—the alternate poles of duty and self-consideration—were no longer pulling. It was like a great burst of freedom. He would never again have to worry about operational radiation.

**S**HE WAS asleep. Beneath the white sheet, McCune's wife looked strangely small and helpless. Her face was wan and the lingering scent of the anesthetic was heavy in the room.

For months he had feared this

moment. But now that it was here, he felt hardly any emotion at all . . . The baby had been born, as it inevitably would have been come hell or high water or fifty shuffle emergencies. And now that it was over, all the anxiety was gone, even though he hadn't seen his daughter yet.

Instead, there was the calming realization that Beth had been right all along; that they had desperately needed a child. And if the baby were something less than human, they would only love it all the more.

His shoulders were squarer than they had ever been in all his thirty-eight years as he kissed his wife on the forehead.

"Dr. Logan says you may see your daughter now, Mr. McCune."

He turned toward the nurse in the doorway. "Is—is the baby all right?"

"There's—" the nurse hesitated awkwardly. "Dr. Logan is waiting."

She led the way down the corridor and he followed . . . So there *was* something wrong. Still, he felt no dejection. After all, hadn't he sincerely expected some sort of deformity?

She motioned him to a halt in front of the glass partition of the nursery and went inside. He watched her cross to a doctor who was bending over one of the cribs. Then she spoke against the back of her hand and the physician looked up sharply and started anxiously toward McCune.

But he paused and gestured for the nurse to follow with the baby. Her eyes widened apprehensively

and she shook her head.

Tensing, McCune strained to see over the side of the crib. He was suddenly sick inside at the portentous pantomime he was witnessing. Why, he wanted to shout, was she afraid to pick up the baby?

She was spared the apparently repulsive task, though, as five men wearing the arm bands of the UN Medical Research Commission swept down the corridor and barged into the nursery. Three of them crowded around the crib while two held X-ray plates up to the light. Astonished, they pointed with shaky fingers at details on the negatives.

Good God!

He hurled the door open and charged in. But his presence went unnoticed in the din of excited voices.

" . . . compensative muscular development . . . "

" . . . completely enclosing the stroma and replacing the serous membrane . . . "

" . . . might be mistaken for splenomegaly, if it weren't for the other decisive evidence . . . "

Nudging two of the medical men out of his way, McCune gripped the side of the crib and stared down.

Dr. Logan came over and grasped his shoulder. "This isn't the first case. There was one in Germany eleven years ago. But that one died. Oh, it wasn't because of this," he added hastily, waving his hand over the child. "It was a perfectly normal infant mortality. Then five years ago there was an-

*(Continued on page 114)*



*Illustrated by Paul Orban*

BY LEO KELLEY

## *the human element*

“GOING TO THE circus?” the man with the sallow complexion asked.

Kevin nodded but didn't look at his questioner. He nervously brushed back the lock of gray hair from his lined forehead and pushed his rimless glasses into a more secure position on his nose. His worried expression made him look older than his forty-eight years.

*It was absolutely amazing what science could do.*

*The last century of progress had been wonderful!*

*Why even the circus was far better—or was it?*

"Hear it's better than ever," the man continued in a flat toneless voice. "*The Great Golden Ball* is supposed to be really something. Or so they say. I go every year. It's really amazing what they can do nowadays—science, I mean. Even the circus is better for it."

Is it? thought Kevin as the speeding, robot driven monorail transport rocketed past the brilliant pastel buildings shining slimly in the sunlight filtering through the plastic dome covering New New York. Oh, is it?

The man next to Kevin, discouraged by the lack of response to his attempts at conversation, quieted and both men relaxed in the privacy of their own thoughts.

At any rate, the other man did. Kevin couldn't relax. His son and daughter-in-law with whom he lived could not be aware of his absence yet, Kevin reassured himself. No one knew he was here. And when the men came for him, and Sally, perhaps with tears in her eyes, went to fetch him and his small suitcase it would be too late.

And that would be that.

The transport slowed noiselessly to a stop and most of the passen-

gers rose to leave. The robot driver sat motionless until the last of the people, Kevin among them stepped from the loading platform to the ground. The electronic currents whirled, the doors closed and, the circuit complete, the transport moved off into the shining caverns of the city.

The people hurried forward and passed quickly through the entrance to the amphitheater over which hung a sign:

#### MAIN ENTRANCE TO 2088 VERSION OF CALDWELL'S GIANT CIRCUS

Kevin watched the people file through the entrance and slowly, almost reluctantly, followed them. He presented the red plastic coin to the robot at the entrance, but hardly heard as its electrical voice crackled, "Thank you, sir. Enjoy the show."

Kevin walked with the crowd along the spotless corridor and stepped aboard the automatic lift, getting out at the floor above. He seated himself in one of the comfortable lounging chairs and shuddered slightly as it fitted itself to the

contours of his body. His fingers clutched tightly the undistinguished box he carried and something within him resisted the comfort offered by the large chair in which he sat.

People continued to file in and take places and the amphitheater was quickly filled. Soundlessly. The walls absorbed the sound and invisible filters removed the dust from the air. Occasionally people took small pills from the containers built into the sides of their chairs and popped them into their mouths. Kevin knew the pills tasted like popcorn, candy floss, and some even like hot dogs. But they were, of course, not the same as the real thing. Neither was the amphitheater.

Once there had been great canvas tents put up in the open air, and wood shavings covering the ground within, and hard benches for seats. The area around the tents had been sprinkled with small stands that sold soda in bottles and candy floss colored pink that melted into sweet nothingness in one's mouth. And everywhere there was an exciting smell made up of many separate things. Animals, the food-stuffs on sale, sawdust, and the sweat of many human beings pressed tightly together on the bleachers. There were the shouts of barkers, colored lights, and men who sold little lizards that changed color as you watched them. Kevin knew all this for he had read it in the book which he had bought from the ancient shopkeeper in the run-down section of New New York, how many years ago? Kevin smiled slightly to himself as he recalled

the puzzled expression on the shopkeeper's face when he purchased the book.

The circus was beginning and Kevin interrupted his reverie to watch.

On small elevated squares in the center of the great arena stood figures almost too horrible to look at. Some flailed many arms about aimlessly; some simply stood—vacantly—and their undersize extra limbs which should have been wings fluttered sadly. One or two figures crawled about on their small squares scratching their scaly skins and making whimpering noises. One seemed to be making efforts to rise from where it lay in an amorphous heap, but was prevented from doing so by a grotesque oversized head which the creature seemed incapable of raising from the slab on which it sprawled.

Kevin's stomach tightened. Every year, he knew, specimens such as these, the products of the effects of radiation on the genes of their parents or, perhaps, grandparents during the war that ended nearly a hundred years ago, were placed on display in the circus on their small squares where rising electrical currents instead of bars imprisoned them. Even the freak shows in the twentieth century circus were different from this. At least then the freaks were still, well, *people*, and freely chose to exhibit their oddities for profit. In many cases it was the only way they could earn a living. But this was different. These senseless mutants were captured like animals after having been abandoned by their parents; and

were being displayed with the same lack of humanity.

Kevin watched robots perform mindless feats of strength as the circus continued. He saw colored opaque rays support a slab of concrete and gasped with the rest of the audience as the heavy slab was suddenly disintegrated by a sudden rainbow fusion of all the rays.

He listened as the recorded commercials whispered their wiles to the captive audience.

Suddenly a panel slowly opened in the ceiling of the amphitheater and dramatically, silently, an immense golden sphere descended until it hung glistening at the end of its thin cable in the center of the great arena. The lights dimmed and a hush fell over the crowd. The sphere suddenly glowed brightly and, at this signal, all other lights in the amphitheater were turned off. Kevin stared as the sphere began to rotate on its axis. He heard the first reaction the audience had yet shown; the "ohs" and "ahs" that used to accompany fireworks displays in the old days. He looked into the sphere and could not believe what he saw. *He* was in the sphere and he—! Everyone would know, he thought in horror and fear! He tore his eyes from the sphere and looked, expecting anything, at the people near him whose faces were dimly visible in the light from the sphere. They all gazed spellbound at the hypnotically revolving globe. Kevin listened as a woman whispered to the man next to her without taking her eyes from the shining bubble.

"Can you see it, Jim?"

"Yeah," the man answered softly.

"I always dreamed of playing a love scene with Dirk Anders. He's the best actor in the Lifies. And there I am! Doing it—in the Golden Ball," the woman sighed.

"That's not what I see," the man said in a low voice, not taking his eyes from the turning globe. Kevin watched the man's mouth working. Saw him wipe the spittle from the corners of his mouth. He turned away from the naked look in the man's eager eyes.

A child of nine or ten in front of Kevin clutched excitedly at the sleeve of the woman next to him. "I'm in there, Mom! See me! And I've got a dog! See, he's all black with one white paw! Just like I told you I wanted him to be, Mom!"

The woman answered her son absently as she stared intently into the ball and Kevin wondered what private and personal dream she saw herself living. *The Great Golden Ball*, as it turned hypnotically on its cable, was providing everyone with a vision of his or her own particular wish-fulfillment. The spellbound audience was happily wallowing in a dream world.

Kevin left his seat abruptly and boarded the lift in the corridor. On the lower floor he searched until he found the entrance to the arena. It was temporarily empty, but soon the robots would be using it as they brought equipment into the arena for the next display. Kevin opened his box and took from it the gaudy costume he had secretly made. Quickly he slipped it over his clothes. He took out a small mirror

and, working quickly, covered his face with white powder. As he applied grease paint to his face in bright, bold strokes, a saucy grin smiled back at him from the mirror's surface. He slipped the white skull piece over his head and fastened the red wig to it. One last look in the mirror and he was ready.

Kevin skipped lightly, in spite of his forty-eight years, out into the glaring light of the arena.

Silence greeted him.

He walked about. He skipped. And suddenly fell. He rose, rubbing the place of his contact with the floor, and scanned the floor beneath his feet. Suddenly, he threw up his hands in mock surprise and, bending from the waist, picked up something from the floor. Triumphant he held it up. It took the audience a minute or two to "see" the imaginary straw, or pin, or whatever it was, that was clutched between Kevin's thumb and index finger. His painted smile beamed on the people before him and seemed to grow larger as a faint titter arose from a little girl in the first tier of seats.

Kevin waved to her.

She hid her face in her hands. And then waved shyly back.

Kevin skipped about the arena watching the people whispering among themselves. The softest ripple of laughter ran through the audience and Kevin's heart soared. He repeated his fall and waved to a small boy who waved wildly back.

Kevin's wig bobbed gaily as he hopped and strutted about the arena waving to the children.

"Wave to me! Wave to me!" cried a shrill voice from the stands.

Kevin did not see the robots approaching on the run and yet was not surprised when they seized him and carried him from the arena, his red wig still bobbing gaily. It could not have ended otherwise, Kevin knew. But no matter. The children had laughed. So had many of the adults.

The robots deposited him in the corridor beside the entrance to the arena and Kevin found himself facing two well dressed and corpulent gentlemen.

"What's going on here?" shouted the first man. This was Mr. Caldwell himself, the owner of the circus. His picture had been on the Communico Screen in connection with the advertising for the circus Kevin remembered.

"Are you crazy?" the second man spluttered.

Kevin slowly removed the wig and the white skull piece and stood with lowered eyes, his arms at his sides, facing the two angry men. As they continued to shout at him for an explanation Kevin, using the skull piece, wiped the clown make-up from his face.

Both men, out of breath, paused and Kevin opened his mouth to speak. "I want to apolo—," he began but Caldwell interrupted him.

"Hey, Mike," he said to the other man, "Isn't this the guy whose picture they're sending out on the Communico Screen? You know, the guy who ran away from his son's house before they could send him to the Psych Center?"

Kevin didn't give the man a chance to answer the question. "That's true, sir, and I'm going home now. I'm sorry for the trouble I've caused but I had to do it. I—," he faltered. How could he explain about what he had done and why he had done it? Kevin brushed the gray lock of hair back from his forehead and reached absently for the glasses he had removed earlier while applying his make-up. "It's a very long story," he said finally and there was a weariness in his tone that was not merely the result of his exertion in the arena moments before.

He stood quietly before the two men. The shouting from the arena did not quite penetrate his consciousness.

Kevin thought of Sally and Edward and how they had reluctantly decided to send him to the Psych Rehabilitation Center because he persisted in "living in the past" as they put it and refused to be suitably interested in or impressed with the "progress" their century had made. When Kevin had tried to explain that the progress they spoke of was not all, he sincerely believed, of a worthwhile nature they had merely shrugged and looked at him oddly.

He was willing to go through with the Psychlab's "Rehabilitation Program" now for he had proved his point. There were some good things from the past and a clown was one of them.

A circus without noise and fanfare and excitement and laughter was nothing. He hated the sterility of its present scientific gadgetry.

The best that could be said for it was that it did no obvious harm. But with the advent of *The Great Golden Ball* people were taking one more step away from what could be a pleasant reality and one more step in the direction of Dreamland. And Kevin was certain that this Dreamland would one day prove to be crawling with nightmares.

"—something written about this a long time ago," Caldwell was saying to his assistant. "Looks like its got possibilities. Back in the 1900's they used to have these guys who made fools of themselves in the circus. People loved them. Sorta made them see their own faults and frustrations and all."

"But, sir—" the younger man began.

"I know we're supposed to be a streamlined outfit but you can hear that crowd yelling out there as well as I can. That's proof enough for me! This thing's good!"

Kevin listened in amazement. This was not the way he had expected things to go. They should have sent him home in the custody of one of the robots by now. Or called the Psych Rehabilitation Center to have someone come and get him.

"What's your name, dad?" Caldwell asked.

"Molloy. Kevin Molloy," Kevin answered, feeling shy all at once. "But I didn't—"

"Listen Molloy. Get out there and do whatever you did before. No, don't ask any questions now. We can settle details later. But from now on you're working for Caldwell's Circus!"

Kevin pulled the skull piece on his head once again and with shaking fingers applied his grease paint. It was a poor job but Kevin hoped it would look good enough. Still fastening the red wig, he ran out into the arena and was stopped short by the thunderous roar that went up from the crowd. Kevin lifted a boy from the stands and sat down on the floor of the arena, the boy on his lap. The age old game began. Kevin's hands covered his face. The boy pulled away one finger after another until Kevin's painted smile beamed out at him. They laughed together.

Kevin played the clown and listened simultaneously to the voice shouting in his mind. Sally had always said an older man should have a hobby or something to keep him occupied. That was why I got such crazy ideas, she said, because I didn't have enough to do since I retired. Well, now I've got more than a hobby. I've got a job.

I'm a clown! Maybe I can get Caldwell to put some sawdust on this floor; it's awfully slippery.

Kevin placed the boy back in the stands and skipped about the arena.

Maybe he'll put up a candy floss stand and sell popcorn instead of all those pills, Kevin thought as he smiled at the happy crowd.

Kevin slipped, fell, and the crowd howled its delight when he found the imaginary straw.

As he staggered exhausted from the arena, his heart singing, Mr. Caldwell was still excitedly talking to his assistant, who was vigorously nodding his head in agreement.

"—remember some ancient history myself! We'll get him to teach some other guys the same kind of stuff. Remind me to ask him about that. I figure maybe we've come full circle on this, and he's got just what we need around here—the human element."

**E N D**

## THE FIRST WORLD OF

TWENTY of the most outstanding short stories published during the first five years of IF Magazine! Selected by the editors to include as many variations as possible, you will find something different in every story—an exciting variety of mood, idea, theme and pace. Here you will find Isaac Asimov, Charles Beaumont, Jerome Bixby, James Blish, Philip K. Dick, Frank Riley, Robert Sheckley and others—in a book chock full of the best in science fiction entertainment.

The edition is small and many places did not receive copies. However, if your local news dealer cannot get you a copy, send 50 cents to IF Magazine, Kingston, New York, and a copy will be mailed to you at once.

## **What Is Your Science I. Q. ?**

HOW SCIENCE-WISE are you? Score 5 points for each correct answer; 75 is good, 80 very good, over 85 makes you a whizz. Answers are on page 120.

1. The average weight of the human skeleton is approximately \_\_\_\_\_ ounces.
2. The South Antilles Arc joins South America to the Antarctic continent beneath the \_\_\_\_\_ Ocean.
3. The inert gas argon is prepared from liquid \_\_\_\_\_.
4. In the tables of atomic weight, oxygen at \_\_\_\_\_ is used as the standard.
5. Pinchbeck is a form of \_\_\_\_\_.
6. Crystals are grouped according to their \_\_\_\_\_.
7. One horsepower is equal to \_\_\_\_\_ foot pounds of work.
8. The plane of the ecliptic is inclined toward the celestial equator at an angle of about \_\_\_\_\_ degrees.
9. Hydrogen diffuses \_\_\_\_\_ times faster than oxygen.
10. How many points of the compass must be mentioned when "boxing" the compass?
11. A chemical compound which in solution conducts a current of electricity and is decomposed by it is called an \_\_\_\_\_.
12. Coral reefs form only in tropical waters in a belt about \_\_\_\_\_ degrees North and South of the Equator.
13. What measure of length is equal to 1,553,164.13 wave lengths of red light from cadmium?
14. The valence of a chemical element is dependent on the number and arrangement of the \_\_\_\_\_ revolving outside the nucleus.
15. What is Babbit metal?
16. Iron becomes "passive" when treated with \_\_\_\_\_.
17. The measure of interstellar space which is equal to a distance of 3.27 light years is called a \_\_\_\_\_.
18. To convert Centigrade to Fahrenheit, multiply by \_\_\_\_\_ and add 32.
19. The angle between the planes of orbit of the Earth and the moon is about \_\_\_\_\_ degrees.
20. What is the name given to a geometric conception of a fourth dimensional super-solid?

# SHUFFLE BOARD

(Continued from page 105)

other case," Logan continued. "Two more cropped up three years ago and five in 2074. This is the fourteenth this year . . . Of course, the UN has classified all information on the cases as restricted until they can be thoroughly studied."

"But what is it?" McCune demanded, exasperated.

"Pick up your child, Mr. McCune," one of the Medical Research men suggested.

McCune slipped his hands under the infant's back and thighs and lifted, gently at first. Surprise streaked his face and he hastily lowered the child.

"Why," he began, dumbfounded, "she—she must weigh . . ."

"Twenty-three and a quarter

pounds, to be exact," Logan said.

Someone shoved one of the X-ray plates in his hand. "This is the child's spleen and here is part of the reproductive system—the ovaries."

All McCune could see, though, were intensely white patches on the negative where the doctor indicated.

"Our highest X-ray voltage," Logan explained, "couldn't penetrate those areas. We haven't yet analyzed the substance or determined what sort of biological miracle the hypertissue represents. But one thing's certain—as far as blood composition and genetic tolerance are concerned, your daughter will be able to accommodate a radiation level several thousand times as high as you or I without any ill effect."

E N D

## STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (39 U. S. C. 233)

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3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and tri-weekly newspapers only).

James L. Quinn, *Editor*.

Sworn to and subscribed before me this 14th day of September, 1956.

(SEAL)

Charlotte K. Lapine (My commission expires March 30, 1958)



**Atomic powered military aircraft** should make their appearance in three years and commercial aircraft in ten years, according to engineering predictions. Tomorrow's atomic airliners will be locomotives of the sky. The engine will be a giant atomic-powered fuel plane, the coaches smaller ships coupled in mid-air to the locomotive. With this set-up indefinite shuttle service could be maintained, limited only by the crew's endurance. The airborne nuclear train would fly its course, with commercial airliners unhooking on arrival at their terminal airport where other passenger aircraft would latch on for new airports of call. Airliners or airfreighters thus relieved of carrying full fuel loads could haul larger passenger and pay loads. The tow plane concept also solves the problem of shielding passengers from radiation emitted by a nuclear engine.

**Some day** in the not too distant future people may eat whale steaks for dinner, thanks to antibiotics. The so-called mold remedies can be injected at the time of catch and keeps the whale meat fresh right through processing. Recent tests

show that the decaying process, usually well advanced in the whale's intestines within 36 hours, had not started. Both meat and oil were in perfect condition. Injecting whales on-the-run is also being tested by a Norwegian company. On expeditions, the antibiotic can be introduced into the body of the whale either by injection into the animal's stomach after it has been shot, or by harpoon shell during the chase. While whale steaks are for the future, poultry, beef and fish and sea food preserved by antibiotics are now ready for market.

**Discovery of some germ-reversing chemicals** is expected to lead to an entirely new means of controlling disease. The germ reversal accomplished by chemicals consists in making laboratory-grown germs change from non-disease-producing ones to virulent disease producers. The chemicals causing this change are breakdown products of the cell nucleus chemical DNA. Antagonists to such chemicals, if found, would be the expected new weapons against germs, changing virulent to harmless germs.

**Silicon rubber** will soon be used as the center layer in safety glass for supersonic aircraft. The conventional interlayer in safety glass does not withstand the intense frictional heat generated by potential aircraft speeds. Above 180F the conventional layer softens, evolves gas bubbles and rapidly loses strength. At the other end of the scale, temperatures at the range of -65F render it almost as brittle as glass itself.

Laminated windshields made with the new silicone rubber retain full strength and clarity at temperatures ranging from -65F to over 350F. The soft silicone plastic calendered between layers of polyethylene-coated paper flows readily under pressure and requires no bonding adhesive. When laminated and cured under pressure in either flat or curved glazings, it forms a tough rubbery interlayer with excellent optical properties, with haze and distortion minimized.

**Skin grafts** will be sprayed on in the future if a recently discovered method is adopted. Spraying is expected to be particularly useful for burn victims who have lost large areas of skin and haven't enough left for suitable grafts by other methods. The skin for spray grafts is put into an electric kitchen blender which divides the material into tiny particles suspended in salt solution. The suspension of skin particles is then sprayed by syringe onto a piece of fine mesh gauze that has been cut to fit the area needing the graft. The skin particles are deposited as a thin layer over one surface of the gauze. This is then inverted and placed over the graft area. In three weeks, the numerous scattered islands of skin have grown to cover com-

pletely the entire area.

**An atomic powered** engine for an interplanetary missile is being built by the Russians. The researchers picture an atomic-powered unmanned rocket weighing 100 tons for the Mars flight. It would carry 70 or 80 tons of an inert propulsion agent and 20 to 30 tons payload. Once the rocket reaches Mars, it will be able to transmit data back to earth via instruments they claim they already have available. This will enable scientists to analyze the soil chemically and the atmosphere photographically.

**Creation in the** laboratory of functioning glands or other organs of the human body may be achieved in the future. Replacement of failing human hearts by laboratory-grown ones would also seem a possibility. The new kind of spare parts for the human body now foreseen will be built from pure strains of cells grown, or cultured in the laboratory. The gland or stomach or kidney will not necessarily have the characteristic shape and form of the natural organ, but it will be able to function the same way. These spare parts will be achieved through advances in the field of tissue culture which has already provided the means of growing polio virus for vaccine production.

### WHAT IS YOUR SCIENCE I.Q.?

**ANSWERS:** 1—423.2 ounces. 2—Pacific. 3—Air. 4—16. 5—Brass. 6—Symmetry. 7—33,000. 8—23.5. 9—Four. 10—32. 11—Electrolyte. 12—30 degrees. 13—Meter. 14—Electrons. 15—Antifriction metal alloy. 16—Nitric acid. 17—Parsec. 18—9/5. 19—50 degrees. 20—Tesseract.

**Electrical equipment** that will last longer is the promise of a thin skinned copper wire developed recently by research engineers. Using a new metallurgical technique, scientists have been able to coat copper wire with a thin, protective aluminum skin that is only one-fortieth as thick as the average skin on the human body. The resulting product will mean an increase in life, a reduction in size and an increase in the efficiency of present-day electrical equipment. Key to the new technique is encasing the wire in a protective aluminum coat and then recoating with a high-temperature insulation. The wire can operate over longer periods of time at higher temperatures than have been practical up to now.

**Desert water** may soon be saved by whales. An Australian research organization has found a way of cutting down water evaporation using cetyl alcohol, a chemical derived from whale oil. The chemical is used to lay a film over the surface of the water. It restricts water escaping into the air, but does not stop oxygen entering the water and keeping it fresh. Cetyl alcohol is invisible and tasteless and can be used freely in dams and reservoirs. It is harmless to animal life. In ideal laboratory conditions the chemical cuts down evaporation by 80%. Trials over a few years in dams and reservoirs have shown a saving of between 20% and 70%.

**Shock-treatment** apparatus may soon be a standard piece of American farm equipment. With it,

farmers will be able to improve germination, dry grain, process food and kill weed seeds. The key to these possibilities is a small electrical device invented recently by a Department of Agriculture research man. The machine consists of a glass tube, horizontally mounted, and fitted with electrical terminals at each end. The tube has two mouths on top. One, corked in operation, is the entrance for seeds. The other is connected to a vacuum pump. Seeds put into the tube are subjected to radiation from the glow discharge of low-frequency current at less than atmospheric pressure. The device gives greater control than possible before. Experimentally, a working model of the device has successfully speeded up corn seed germination, helped prepare soybean seeds for dehydrated processing and inhibited the germination of other seeds.

**By the year 2005** many kinds of mental retardation may be treated by the use of artificial enzymes. One hereditary form of mental abnormality may be prevented by placing in the artery of a new-born child with such a defect a synthesized catalyst in a polythene tube. The synthetic would do the work that normal enzyme molecules do in the normal child and the infant would then develop in a normal way. These predictions are based on the theory that many kinds of mental retardation are molecular diseases. That is, disease caused by molecules of abnormal structure present in place of molecules of normal structure.

# Hue AND Cry

Dear Mr. Quinn:

After reading Hue and Cry, I'm inclined to agree on the point that S-F will not have an untoward effect on our treatment of an alien. However, the reception depends entirely on how far advanced the alien is, his mode of approach, who's in office at the time of meeting and, most important, the current mode of thinking.

Speaking of thinking, a good example of how divergent thought can be at a particular time is being illustrated right now in our own society. I refer to the difference between scientific non-Aristotelian thinking and that of the rest of the world which can be called Aristotelian or linear thinking. I refer you to Science and Sanity by Korzybski, if further elaboration on the subject is needed. Think of the hostility with which an alien would be

greeted if his mode of thinking was more divergent from the common man's than that of the present day scientist's.

I disagree that scientists go afield in pronouncing on metaphysical problems; the implication that there are areas of nature governed by science, and other areas which are governed by some supernatural non-physical laws, is ridiculous. As I see it, the philosophers have had some 200 years plus to straighten out their affairs, which are still in the same intolerable mess; although I don't see how they could have progressed much further than this when they have to give order to Nonsense or Nothing. These wrong-thinkers do nothing but impede the progress of science; witness the agitation with which something like eugenics is greeted, despite the fact that we are breeding diabetes, near-sightedness, insanity and various other debilities of the congenital and hereditary kinds into our population. We can't depend on some magical cure-all mutation springing up. The odds are against it. But we can change the odds and help the race . . . yet we won't.

—Owen Sear  
Chatham, N.J.

Dear Mr. Quinn:

I have just noted that Mr. King's letter in the Hue and Cry section leaves several unanswered questions regarding "humanists". I should like to clarify the issue.

The term humanism has come to mean two different things in the twentieth century, both somewhat

at variance with our picture of Renaissance humanism. On the one hand we have those who are merely advocates of a greater use of the so-called "humanities" in the college curriculum. On the other, we have a movement which has developed among scientists, writers, educators, philosophers, and liberal religious clergymen and laymen, such as biologists Julian Huxley, Herman J. Miller, Anton Carlson and C. Judson Herrick, psychiatrists Rudolf Dreikurs, Brock Chisholm and Erich Fromm, philosophers John Dewey, Arthur Bentley, Sidney Ratner, Oliver Reiser, Max Otto and Bertrand Russell, and writers Herbert Muller and H. G. Wells.

These "humanists" tend toward agnosticism as regards immortality or the existence of purpose or plan behind the universe, and generally regard the universe as being purposeless and ethically neutral. Man is regarded as being the product of purely natural processes. He "stands alone" (Huxley) without the hope or possibility of outside help. Humanists, whether themselves scientists or laymen, regard the self-correcting scientific world view as the only sane basis for a personal philosophy or religion.

Humanism is represented organizationally in the United States chiefly by the American Humanist Association, with headquarters at Yellow Springs, Ohio, of which Nobel Prize winner Herman J. Muller is currently president and in the world at large by the International Humanist and Ethical Union, with headquarters at Ut-

recht in the Netherlands. It is my belief that there exists a great deal of overlapping of interests between readers and writers of science fiction and those persons actively interested in the humanist movement.

—Edd Doerr  
Indianapolis, Ind.

*If the number of letters received by the editor is any indication of interest, we know the answer to it. Mail has poured in ever since Mr. King (Dec. 1F) made his charges.*

Dear Mr. Quinn:

My main reason for writing this is to add a word or two to the "Man—Where did he come from?" controversy.

It is obviously true that languages do evolve toward simplicity, but this is a fairly recent thing. It was not necessarily true when reading and writing were possessions of relatively few persons. In any case, I think most of us will agree that they have to evolve from simplicity to complexity first. Surely no one believes that the savage or the stone age man went from communication by grunts and gestures to a language of great grammatical intricacy. I doubt very much that this progress could be caused by mutation—no matter how sudden.

Intelligence was not meant to be judged by the mere use of language, but by the thoughts expressed. They are two separate things. We have no evidence of the upward evolution of languages, and we have no evidence of the upward evolution of intelligence. While I do not deny that a relatively simple

gene change would make a physical difference, I doubt that one stroke-of-lightning change would make the difference between early man and the modern creature. Further, the wide physical differences between men don't seem to have any effect on their brain power. In this connection, the question is "Where is something—anything at all—between the cave wall scratchings of the Neanderthalers and a philosophical treatise in Sanskrit or Chinese?" Do we who accept so cheerfully the story of human evolution really know on how little evidence the theory is based? To me, the Biblical story of the creation or the common SF idea that man is descended from stranded visitors from another planet make much more sense.

—Floyd Zwickey  
Rockford, Ill.

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### WEREWOLF BOOKSHOP

7055 K Shannon Road

Verona, Pennsylvania

Dear Mr. Quinn:

I greet the appearance of **THE FIRST WORLD OF IF** with nothing but applause, both long and loud! You are certainly to be congratulated. However, the real motive of this letter is to persuade you to collect another anthology of IF stories using novelettes. I'm sure that sales of a mixed anthology, containing about four or five novelettes and half as many short stories as *The First World of If*, would be another terrific seller . . .

Please give the above suggestion serious thought. I'm sure that I'm not the only one of your readers who would like to see you do it.

—R. J. Banks  
Corsicana, Texas

Sirs:

Why is it SF writers seem to feel that they must always be moralizing? There is almost always some "deep moral meaning" such as: we should be compassionate and forgiving or whatnot, on a level with "the bogey man will get you if you don't watch out".

A few years ago we were supposed to feel individual guilt for every violent death from the trilobites on. Next, we were accused of harboring such horrendous and evil thoughts that telepaths would be driven insane if they were to open their minds. Now we are in a judge-not era, or rather the writers seem to be on a judgenot toot, which promises to be equally sickening. I'll take refuge in Jean Paul Satre, the Judger, the Evaluator.

—T. J. O'Hare  
New York, N.Y.

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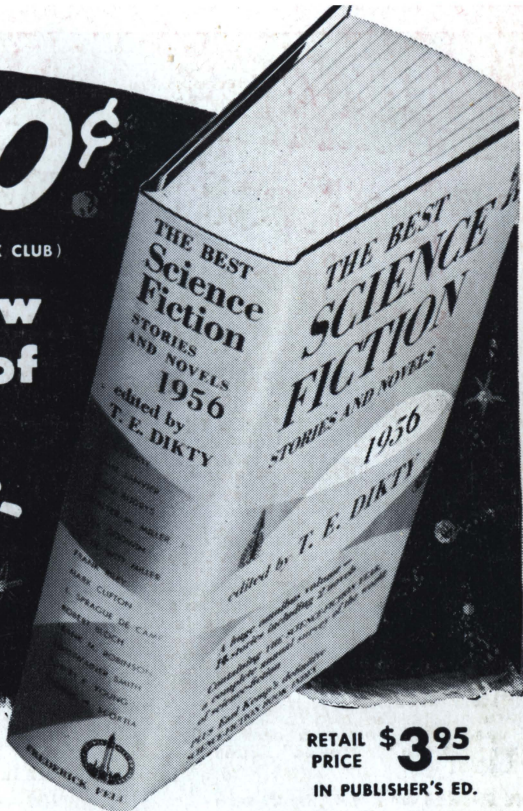
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